

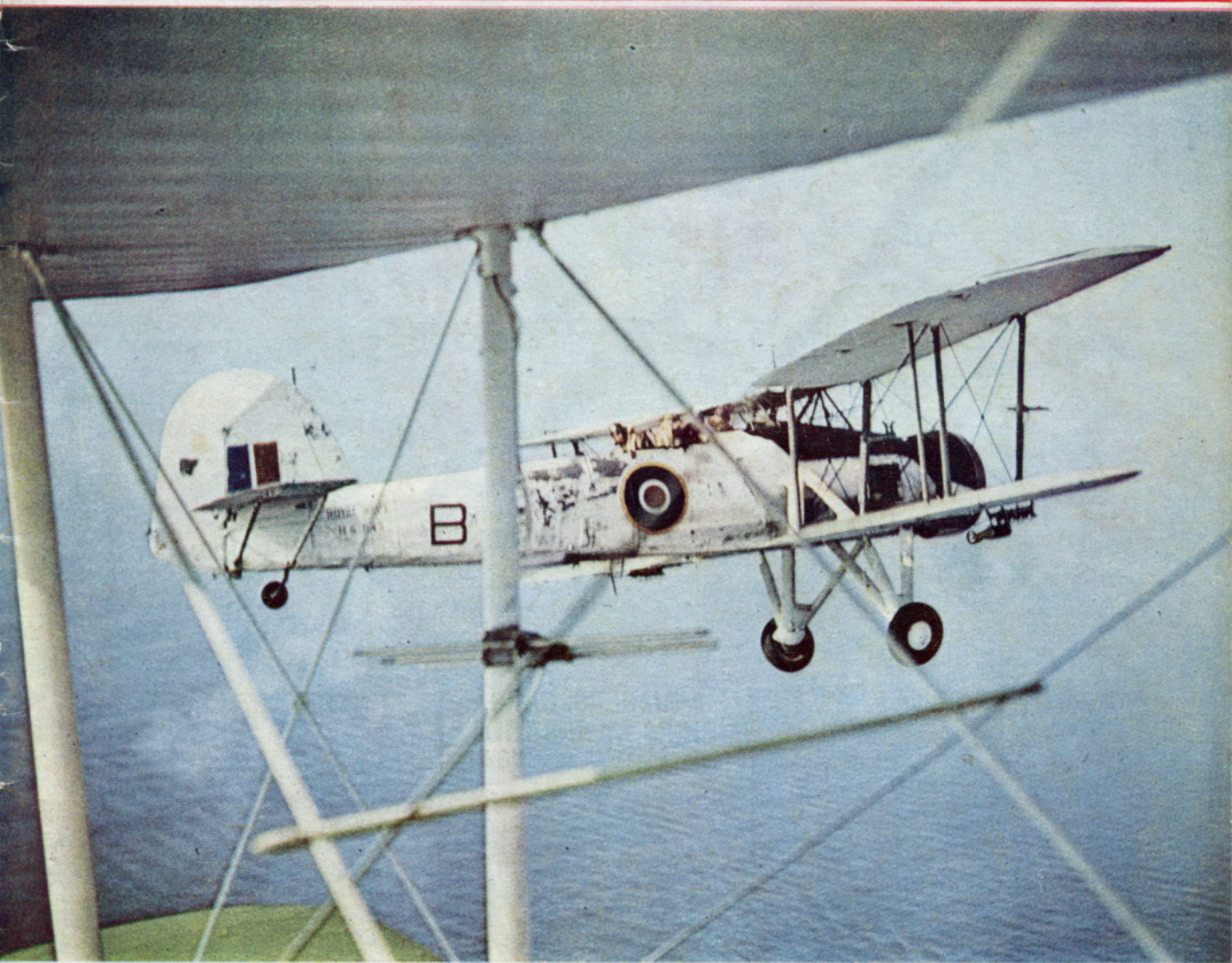
AIRFIX

magazine

MARCH, 1968

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THIS
ISSUE**

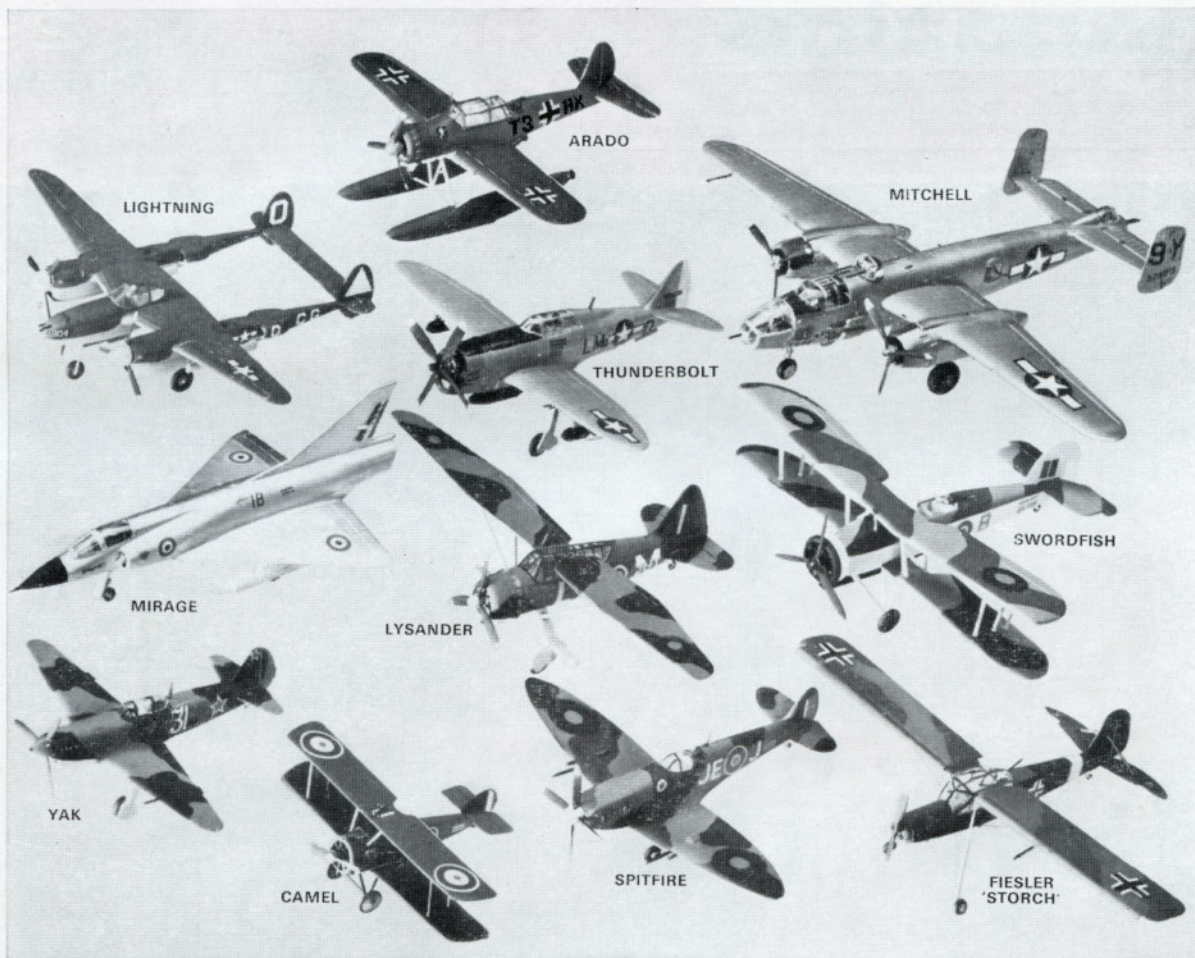
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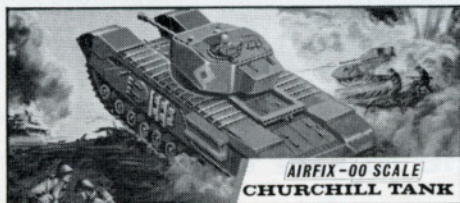
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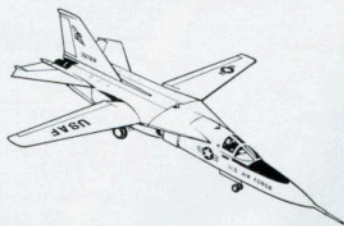
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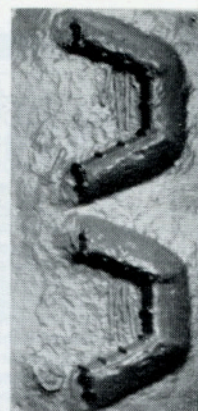
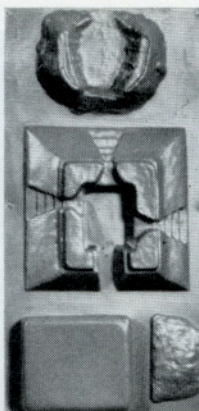
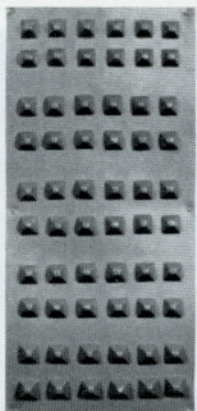
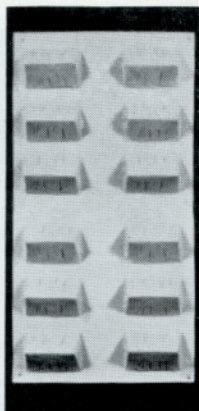
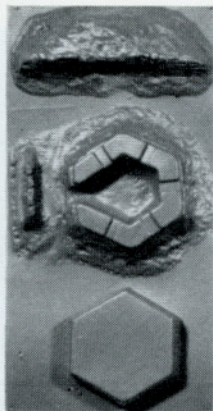
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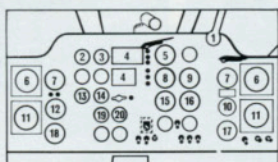
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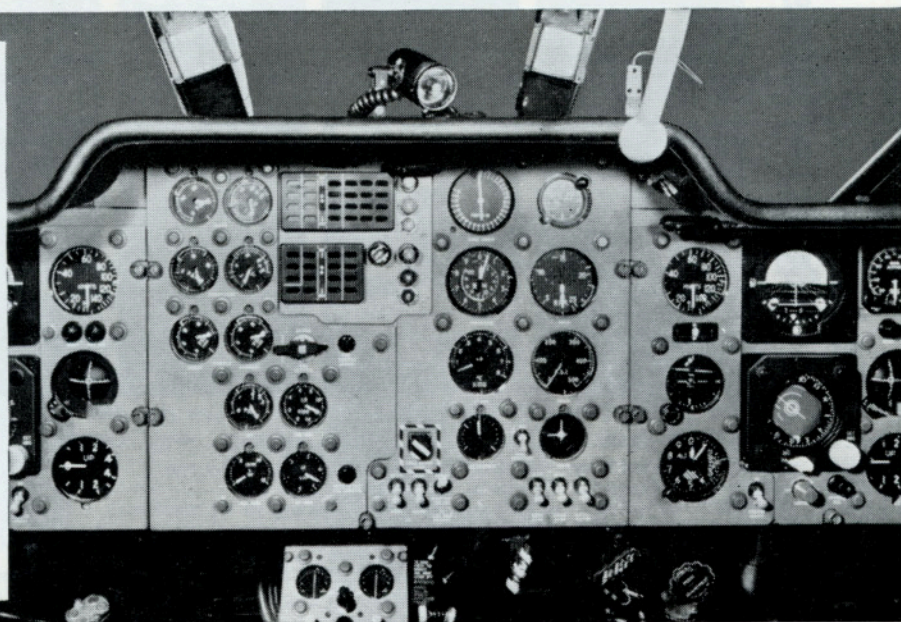
DEPT. A, HAWTHORN HILL, BRACKNELL, BERKS

March, 1968

245



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3. Engine oil temperature
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8. Compressor tachometer
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AIRFIX magazine

AIRFIX

FOR PLASTIC MODELLERS

magazine

Volume 9, Number 7

March, 1968

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COVER PICTURE

HS645 a Swordfish II Blackburn-built in typical 1944-style camouflage. The tonal rendering on our reproduction gives a very good idea of the sickly green in the grey-green camouflage on naval aircraft. Note the red 'B' individual letter. The aircraft depicted in full appears to be white overall—which was unusual, and the area ahead of the pilot is a very dark shade, and might even be black—again, unusual. Can any reader identify the squadron to which the aircraft belonged? It was one of 400 Mk IIs in the HS series, batch block numbers being 154-196, 208-231, 254-299, 312-346, 361-410, 424-471, 484-519, 533-561, 579-625, 637-678.
(Imperial War Museum)

AIRFIX magazine is published for the proprietors, Airfix Products Ltd, by PSL Publications Limited, on the fourth Friday of each month. Annual subscription rate 30s (USA \$4.50). Second Class postage paid at New York Post Office, NY.

Editor CHRIS ELLIS

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NEXT PUBLICATION DATE: March 22, 1968

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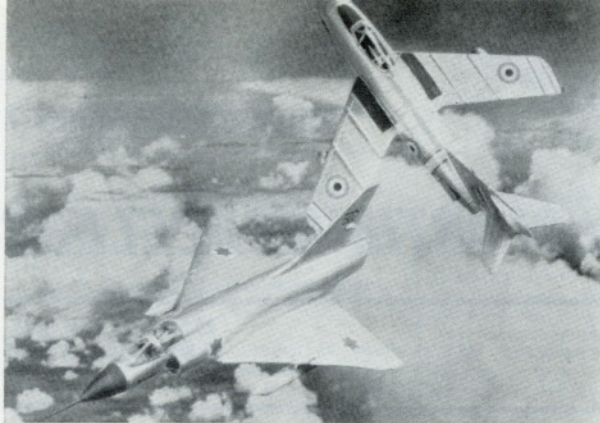
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Above: *Mirage IIIC and Mig 15 from the latest Dog Fight Double kit. Below right:* *The new OO/HO Tarzan set. Bottom right:* *The Angel Interceptor.*

NEWS FROM AIRFIX

The world's greatest value in construction kits

- Dog Fight Double: Mig 15/Mirage IIIC
- Battleship 'Tirpitz'
- Angel Interceptor
- RHA and Tarzan figure sets

RECALLING the 1967 upheaval in the Middle East, Airfix have turned their attention to Israel's Dassault Mirage IIIC and Egypt's Soviet-built MIG-15 for their latest 1:72 scale Dog Fight Double kit. The 40-piece Mirage captures every salient feature of the French-built aircraft, including the Matra guided missile which inflicted such damage in the Egyptian-Israeli war. The MIG-15 is modelled from over 30 detailed parts. UAR and Israeli transfer markings complete the two models. Price is 5s, and the kit includes a twin display stand.

THE German battleship *Tirpitz* has been faithfully miniaturised by Airfix to a 50 foot to the inch (1:600) scale model which is nearly 16½ inches long. The *Tirpitz* was probably the most heavily marked German battleship of the war and suffered innumerable crippling British air attacks before capsizing under a hail of bombs in Norway in November, 1944. No less than 170 parts make up this magnificent model which exhibits every detail of the ship's

lethal armament, launches, antennae and a catapult launched seaplane. Price is 7s 6d. Her sister ship, *Bismark*, is also available in this Airfix fighting ship series.

ON a lighter note Airfix present a detailed construction kit based on Captain Scarlet's Angel Interceptor of television renown. Complete with 'World Army Airforce' markings, the menacing Interceptor is built from a kit of 23 moulded parts and includes a pilot figure. Price is 3s 6d.

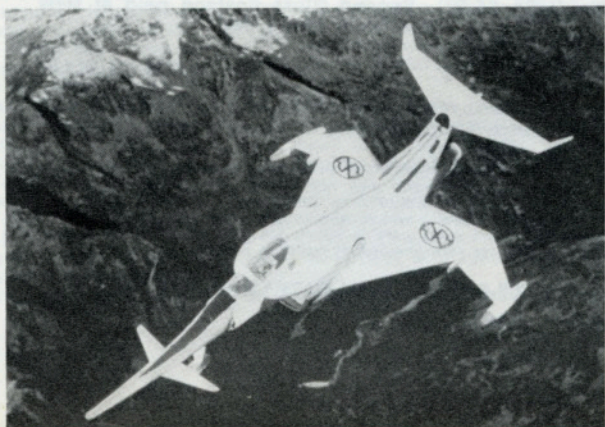
THREE new OO/HO scale figure sets (at 2s 6d each) have been added to the popular Airfix range for serious wargamers and youngsters alike.

The famed Royal Horse Artillery of the first world war are represented in a kit of 33 pieces including six horses, riders, two guns, limber and gun crewmen. The guns are the 13 pdrs of the 1914 period now seen frequently on ceremonial occasions with the King's Troop, RHA. Crewmen for the second gun are in action positions and a base is provided.



Tarzan, his young friend Jai, and Cheetah the chimp join a white hunter, warriors, a dug-out canoe and a selection of jungle animals in the 31-piece Airfix Tarzan set that will appeal to young fans of the television and cinema Tarzan series, and will also be very useful to wargamers as the warriors make excellent Zulus, coming in a variety of action positions.

SOME Airfix kit prices have been adjusted and the UK prices are now as follows: Series 1—2s 6d; Series 2—3s 6d; Series 3—5s; Series 4—7s 6d; Series 5—9s 6d; Series 6—12s 6d; Series 7—15s; Series 8—17s 6d; Series 9—19s 6d.



LATEST in my series of 'Old Timer' conversions is the 4½ litre Bentley, even though this car is some twenty years younger than the others in the range which we have already motorised.

I have followed the pattern set with the Mercedes and others of keeping as

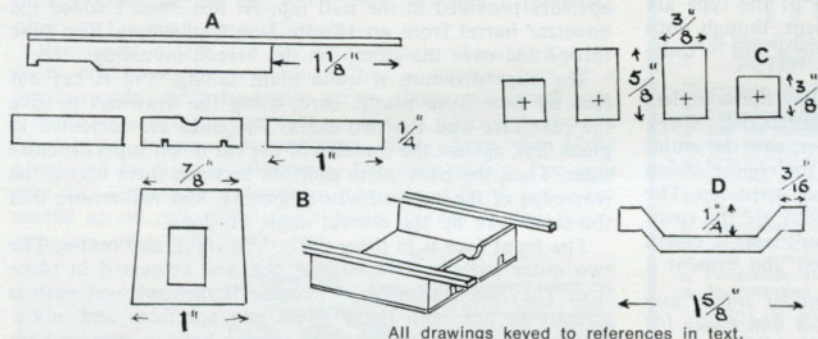
MOTORISING THE BENTLEY

much as possible of the Airfix kit. So again I am using the Airfix motor instead of the MRRC unit, as this is easy to fit and within the reach of most pockets. It was decided to incorporate steering as well, though this means fabricating a front axle as the standard Airfix assembly is too narrow. A certain amount of doodling with pencil and paper produced the following method of getting the car ready for the track. All components mentioned were bought as spare parts.

Start by cementing the two body halves (parts 1 and 2) together and

contrate gear fitted, the small one, in the same way as with the other cars. The ends are also centre-punched to key the rear wheels when these are attached.

Thread the supports on to the axle and cement one in position to the spring and body (the location for the plastic axle will indicate the position). When this has set, attach the other frame to the body and cement the right-hand bearing in place, making sure the axle is square to the centre line of the body and is horizontal. When this is quite firm, the undertray

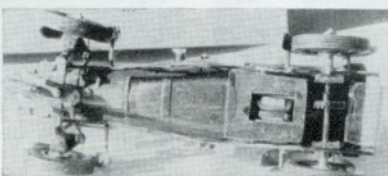


attaching the left-hand frame (part 5). Now take the undertray (10) and cut away the lower half of the super-charger and the rear well as shown in sketch A. Next cut four pieces of plastic card as shown in B, and these when cemented together and to the undertray will form the motor mounting. Notice that the base needs a rectangular hole cut out to clear the armature and provide ventilation, the two notches in the end piece register with the small lugs on the motor, as per previous articles.

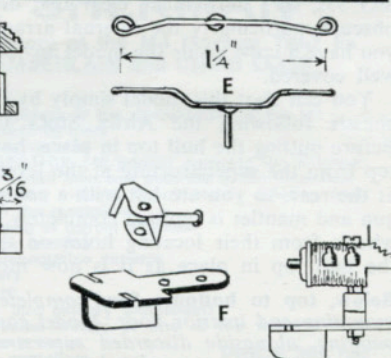
While this assembly is setting, the rear axle supports can be cut from plastic card as in C. The smaller pieces are to compensate for the difference between the inner faces of the springs and body; they are cemented to the larger pieces as shown in section in drawing C. The back axle is a 2½ inch length of silver steel with an Airfix

with the motor in place can be fitted. The slight taper in the mounting will retain the motor in position with the gears meshing. Take great care with the fitting at all times.

The new front axle is made from perspex and reference to sketch D will show the measurements; it is drilled in the centre to clear a 10 BA bolt and at the ends for the MRRC stub



Above: Underside view of the motorised Bentley; note the new front axle and trackrod, also motor mounting tray. **Heading:** The completed model.



axles. Be careful when shaping this as the perspex is rather brittle. The axle is a bit oversize for obvious reasons, though this is, in fact, disguised by the dumb-irons and 'blower' on the finished model.

Associated with the front beam is the track rod; this is made from a wire paper clip, bent as in E, with an ordinary pin soldered centrally. This pin will engage with a hole in the guide shoe to actuate the stub axles. Standard pick-up braids with lengths of thin insulated flex soldered to them are slipped into the slots on the shoe, and when adjusted for length are secured with a spot of cement. The other ends of the flex will pass beneath the radiator and be attached to the motor terminals in due course.

At this stage insert the track rod between the front springs and cement

Continued on page 285

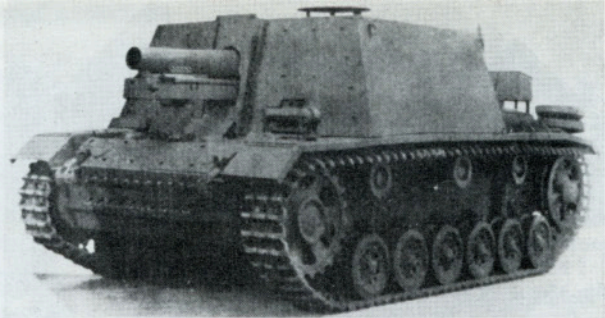
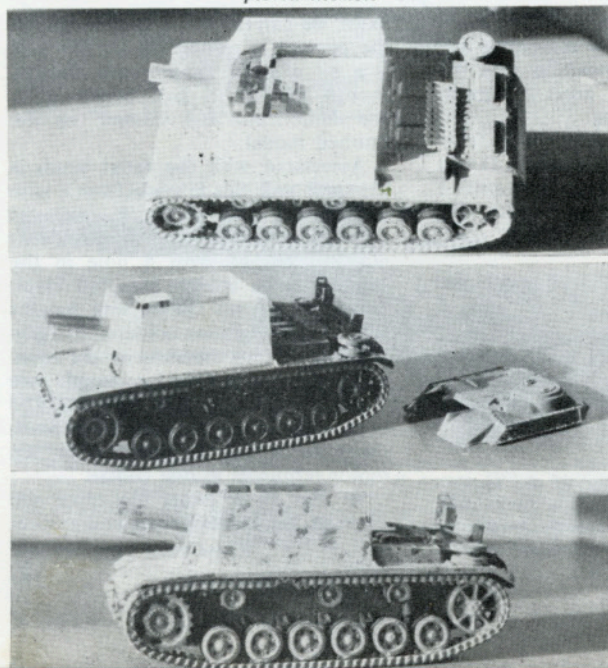
Assault gun and dozer

PREVIOUS articles in this series long ago dealt with most of the conversion possibilities from the Airfix StuG III kit. These have included all variants of the basic StuG III plus the variants of the original Pz III on which chassis the StuG III was built. The few remaining possibilities include Pz III or StuG III ammunition carriers, plus the interesting SiG 33 infantry assault gun which forms this month's main conversion subject.

The SiG 33 (SiG is short for *sturm-infantriegeschütze*) was designed as a heavy self-propelled howitzer for infantry support and carried a 15 cm howitzer in an open-topped armoured superstructure. Only 12 of these vehicles were built before production was abandoned in favour of heavier types, like the Grizzly Bear, on the Pz IV chassis. Some, at least, of the dozen built saw action on the Russian Front, however, so the use of a miniature SiG 33 in wargames would be justified, while those who collect and convert miniature AFVs will find this a simple and pleasing addition to a set of German armour models. Few pictures exist of SiG 33s, so I must make clear that details of the type are obscure, particularly the internal arrangement, though once you have a crew inside the model any omissions will be quite well covered.

You can start this model simply by building the complete chassis following the Airfix StuG III instruction sheet. Before putting the hull top in place, however, saw the entire top from the superstructure at the level of the engine casing at the rear, so you are left with a completely open top. The gun and mantlet is omitted completely, as also are the spare wheels from their locating holes on the hull rear. Cement the hull top in place as it is now modified and cement a

Below, top to bottom: Semi-completed model shows gun mounting and interior floor. Model complete and ready for painting, alongside discarded superstructure section. Completed model.

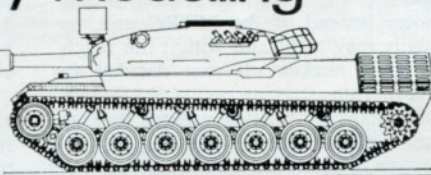


One of the few existing pictures of the SiG 33 infantry assault howitzer which was built on the Pz III chassis. This vehicle has stowage box at rear (Photo by Armin Sohns).

Military Modelling

by

Chris Ellis

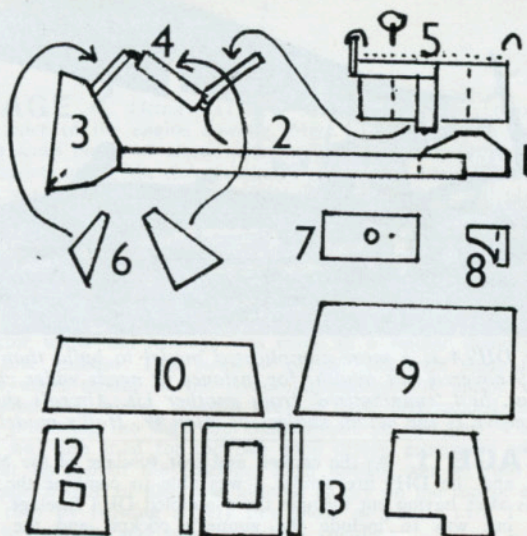


28 mm x 20 mm rectangle of plastic card across the inside of the hull top from track cover to track cover and close up to the rear of the hull top opening. For the gun breech, I used the breech and trunnions provided in the kit, sawing down the trunnion plate to fit close up to the original gun aperture provided in the hull top. At this stage I added the howitzer barrel from an 18 mm length of empty Biro tube force-fitted over the stump on the breech moulding.

The superstructure is quite plain sailing, and is cut out face by face from plastic card, using the drawings to give the rear face and the two sides. The sides are cemented in place first, against the remains of the cut-down superstructure sides. Then the back plate cements between them across the rear edge of the superstructure opening, and will ensure that the sides take up the correct angle of slope.

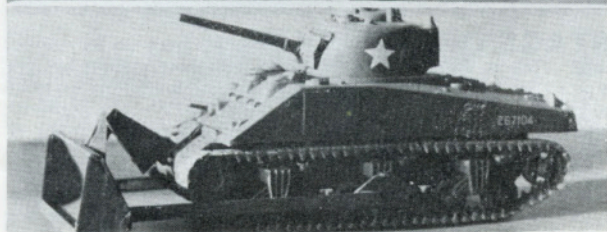
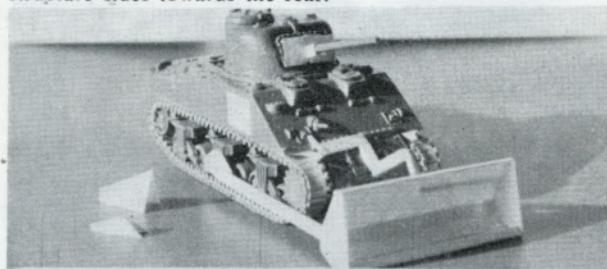
The front face is in three parts, left, right, and centre. The two outer parts are traced, cut out, and cemented in place first. They are cemented so that the leading edge of each is directly in line with the original gun apertures and immediately aft of the transmission access hatches moulded on the glacis plate. Note that the corner is cut from the left-hand section to clear the original driver's visor, while a small sighting visor is cut from card and cemented where shown on the right-hand section. The centre section acts as the mantlet and is simply a rectangle of plastic card with an embrasure slot cut in it as shown. This is slid over the howitzer barrel, taken behind the right- and left-hand sections and cemented close up against them. Then two strips of 1 mm wide card are cemented up the joins to make a neat finish. Finally, two further little strips are needed to fill the gap between the shield and the glacis plate on the right-hand side, and between the visor and the face on the left-hand side.

Final task was to add a cradle beneath the howitzer barrel and I cut this from a barrel left from a Flak 36 conversion; simply saw 16 mm from the cradle and cement it under the barrel and close up to the breech moulding. Not knowing the internal layout of this vehicle, I contented myself with the suggestion of an ammunition locker up against the rear plate of the superstructure, and made a top and front from plastic card over the full width of the interior. A 6 mm square plate stands in the front left corner of the fighting compartment, standing on two 15 mm long legs at the rear and two short legs taken to the inside of the front face. I



Above: Full-size parts for Sherman dozer model. (1) Mounting plate—cements on centre bogie. (2) Side arm. (3) Dozer blade—lip dotted. (4) Hydraulic cylinder with link to blade. (5) Plan of glacis showing layout of armoured hydraulic leads. (6) Armour covers for cylinder and link—two of each needed. (7) Template for M34A1 mantlet. (8) Mudguard extension. (9) Side. (10) Rear. (11) Left front. (12) Right front. (13) Centre front. **Below:** Sherman fitted with M1 dozer blade—compare with drawings above. made these legs from odd scraps of thin plastic. The function of this plate escapes me, but it was probably a mounting platform for auxiliary sighting gear.

Remaining details are the spare wheels which go on the track covers at the rear and either a stowage box or a jerrican rack across the engine access plates on the hull rear. I chose to add the latter, cutting down a half-track rack to 20 mm in length. For crewmen, those from the Airfix armoured car kit are admirable. The only picture I've seen of a SiG 33 in service showed it with a sand finish and green mottle as on my model, with black crosses on the superstructure sides towards the rear.

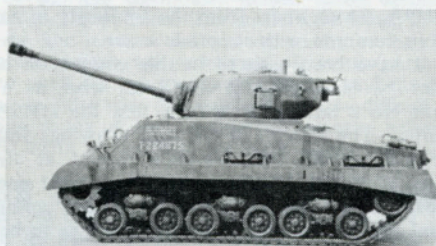


AN even simpler model than the SiG 33 is the Sherman fitted with a dozer blade, another 'must' for a military collection. This can be added to a Sherman model you've already made, if desired. The basic tank is made according to the instruction sheet and the only extra items needed are various thicknesses of plastic card. The dozer fitted Sherman

Continued on page 285

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Building the Nine-Ack

BY
ALAN
HALL

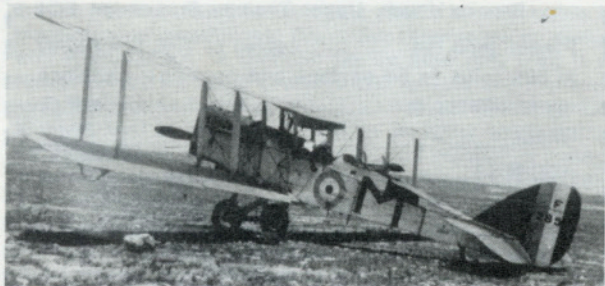
IN last month's conversion article I described the methods used to produce a DH9 out of the Airfix DH4 kit. In this issue I am suggesting ways to build the logical follow-on, the DH9A, which apart from the similarity in name had very little in common with its predecessor.

Luckily I have been assisted in this conversion by Wing Commander N. H. Unwin RAF (Retd) who, as a Flying Officer with No 8 Squadron in Iraq, flew the DH9A in the early 'twenties. The aircraft in the scale drawings and photographs, F2858, coded 'M', Unwin's mount at the time, belonged to 'B' Flight. Markings were somewhat unusual as no underwing serials were carried, the Flight colours were maroon and the fuselage serial was so small as to be almost indistinguishable. Under the wings the individual code was carried on both sides and on the centre section of the top wing. Much of the repair and maintenance of aircraft was naturally carried out in the desert airfields and local variations on the standard theme were almost inevitable.

The Nine-Ack differed considerably from the underpowered DH9. The forward fuselage also suffered change and so did the wings. These were of broader chord and wider span. Local modifications included an underwing fuel tank and an extra radiator under the nose which Wing Commander Unwin and the photographs prove was only used during the 'hot' season. Wheel covers were removed during operations but were replaced when any high-ranking officer ventured on the scene! Various improvisations, locally manufactured, included underwing storage racks for use when ferrying aircraft on long-distance flights.

To make this model I found that bits and pieces from four kits were needed. Just in case anyone quibbles at this, I can assure readers that the expense has been kept to a minimum and although almost every part mentioned *could* be made from scrap plastic or, in the case of the wings, modified from those in the DH4 kit, it makes life much easier to spend a few shillings and avoid almost inevitable frustration. Most people would consider the money well spent to add something 'different' to their collection.

I found that the wings on the Frog Wallace kit were ideal for the DH9A. So they should be, as the Wallace had DH9A wings and various other sub-assemblies which were available in quantity at that time. Exhaust ports from an Airfix Mustang, a propeller from the Revell Camel and a large amount of different thicknesses of plastic card completed the shopping list.

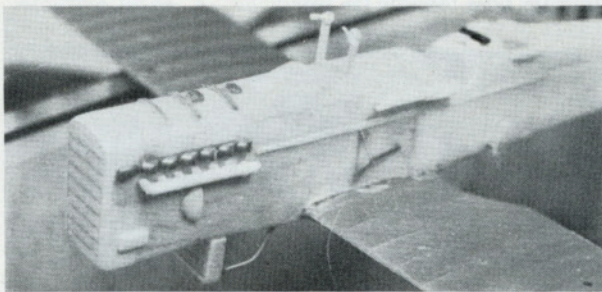


The DH9A is a more complicated model to build than the DH9 covered last month; for instance, it needs wider chord wings, best 'cannibalised' from another kit. Aircraft shown above is the actual subject of Alan W. Hall's model.

STAGE 1 As the cockpit and rear fuselage of the Nine-Ack and the DH9 are similar I was able to combine the two areas after having cut through the assembled DH4 fuselage. The first cut was to include the gunner's cockpit and the rear fuselage: the area between this and the pilot's cockpit was removed and a third cut was made $\frac{1}{4}$ inch forward of the cockpit. As the fuselage width is equal in plan almost throughout its length it was then possible to combine the two pieces of DH4 and add the engine and nose section in balsa wood. A further thin piece of wood was needed to fill in the gap left under the fuselage by the wings. The whole assembly was glued and allowed to dry thoroughly. (Below.)



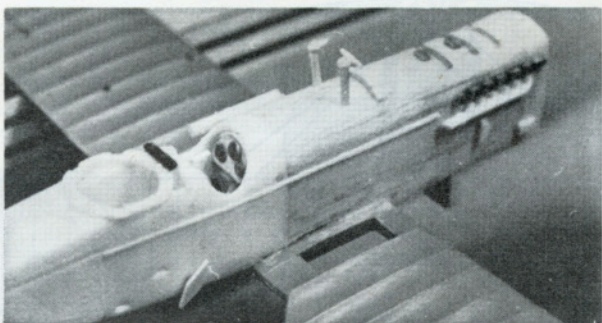
STAGE 2 The rough shape of the nose section is then carved and sanded. At the same time the joint between the two fuselage pieces is flushed off and a slot cut in the underfuselage for the wing. The Wallace lower wing is easy to fit and any slight inaccuracies can be removed by use of body putty and later filler.



STAGE 3 Attention should now be given to the engine area. This is quite difficult, for the numerous bumps, bulges and air intakes are very small but are at the same time essential to get the character of a Nine-Ack. The nose radiator received attention first of all. This was made by sticking thin strips of plastic card on the square end of the nose, rubbing them down until hardly visible and then placing a plastic card mount round the outside by cutting into the balsa wood and letting the four pieces into the correct depth. The plastic card mount is not essential but I found that it gave a much better edge at the corners and proved to be better to work on. A very slight lip can also be given to the edges of the radiator. (Above.)

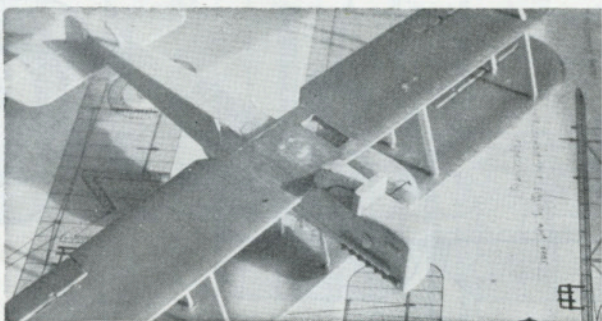
Left: DH9A, F2858: M, of 8 Sqn had unusual colour scheme, drawn on pages 256-257, and some non-standard mods. Compare with picture of completed model on opposite page (Both pictures on this page courtesy Wing Commander N. H. Unwin).

STAGE 4 Detail was then added to the top, bottom and sides of the engine cowling. Most of these can be made from scrap pieces of plastic stem or plastic card, but the seven air outlets above the actual exhaust stack were very difficult. I tried various ways of making these from both wood and plastic but their size defeated me. In the end I found that the exhaust stacks on the Airfix Mustang kit fitted almost exactly and after cutting away the base part and rubbing down the angle of the individual stacks I was able to reproduce with accuracy the required fitting. The exhaust stacks on the Nine-Ack itself were made from the DH4 kit by cutting off the rear extension. The radiator under the fuselage was made in a similar manner to the nose radiator. Thin strips of plastic card were stuck to a balsa wood mount of the correct dimensions. A plastic card surround was added, given a coat of filler and sanded down thus producing the slight lip characteristic of this part. Plastic card was also used for the two wind driven generators which appear on top of the fuselage. Each upright was let into the fuselage, a blob of filler was allowed to dry on the top of each and then by twisting a very thin piece of plastic card I was able to make the very small propellers. (Below.)

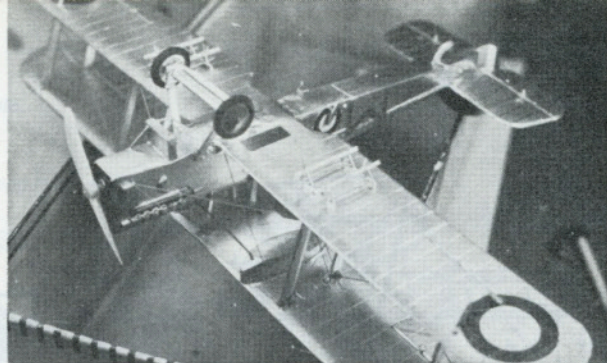


STAGE 5 The bottom wing is then added. Before doing this an oblong hole is cut in the starboard wing root 7/16 inch long and the width between two ribs. The object of this was to provide a sight for the aiming of bombs—crude but efficient! (Above.)

STAGE 6 The upper wing has three modifications. These are the addition of a long range tank on the starboard side and filling in the central step on the trailing edge found in the Wallace. Both of these mods are made from balsa wood. The third modification includes rubbing down the HP slots on the wing leading edge as these only came into being with the Wallace. (Below.)

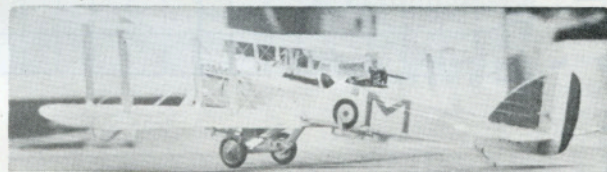


STAGE 7 Before assembling the wings, the port side Browning gun is placed in position as it is difficult to get to this after the wings are in place. I drilled a small hole in the gun position and another in the gun itself. The addition of a small piece of correct diameter plastic rod, heat treated from scrap stem, made the joint neat. All longerons and interplane struts are cut from plastic card. Both the Wallace and DH4



struts are too thin for the Nine-Ack so each of the 12 struts had to be cut and laboriously shaped to an aerofoil section before sticking in position. The struts were stuck to the lower wing in the first instance and allowed to dry at the right angle. Those model makers not having an air brush paint spray are advised to paint the top under wing surface and the fuselage at this stage as otherwise this confined area is difficult to get at later. Allow plenty of time, 24 hours in my case, before touching the model again to complete the wing assembly.

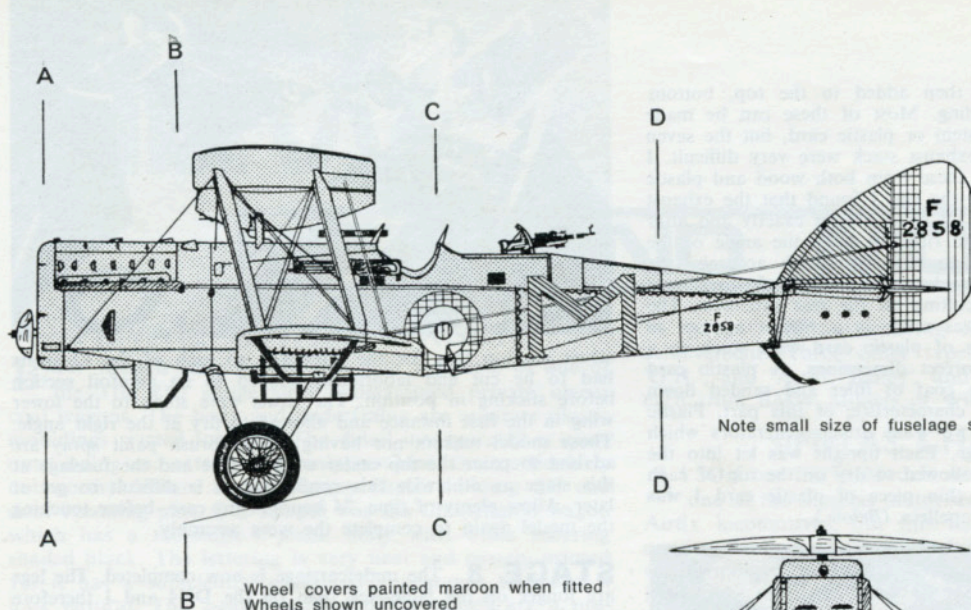
STAGE 8 The undercarriage is now completed. The legs are longer on the Nine-Ack than on the DH4 and I therefore cut them off and replaced each one with a longer piece of plastic card sanded to the same section. The axle is assembled and the whole unit let into small holes drilled under the fuselage and just in front of the wings in the fuselage sides. The uncovered wheels presented a considerable problem and I admit that I sidestepped the issue by using the DH4 wheels as in the kit to depict the wheels with covers in place. Had there been more time I would have experimented by making a mould of the wheel cover and moulded clear acetate sheet centres. The DH4 wheels would have been de-centred leaving only the tyres and the two pieces joined together. The spokes would have been drawn in using a mapping pen. (Above.)



STAGE 9 The finishing touches are now made before painting. Wing bracing was made from heat-stretched plastic stem, cutting the desired lengths and attaching each by a tiny dab of cement as described last month. The 'Y' shaped bracket on the fuselage side under the cockpit was made from stretched stem and so was the fuel pipe from the long range tank. The cockpit was detailed by a piece of plastic card being added under the cockpit sill and instruments made from thin circular sections cut from stem. Underwing skids come from the DH4 kit but the propeller came from a Revell Camel. Bomb racks were made from stretched stem and plastic card. Finally, the Scarff ring was custom built as the DH4 fitting is not strictly accurate for a 9A.

PAINTING Being all silver doped the Nine-Ack is fairly easy to paint providing you can use silver paint satisfactorily! The maroon colour of the Flight markings is made by mixing equal parts of Humbrol matt blue and gloss red plus a slight touch of white. The large 'M's are hand painted but could be drawn and painted on sheet transfer instead. Transfers came from the Wallace or, for the fuselage roundels, from HisAirDec sheets. Red, white and blue stripes on the rudder were hand painted. Serials came from Letraset sheets but those on the rear fuselage were hand drawn with a mapping pen because of their small size.

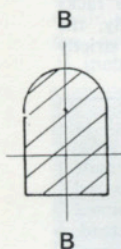
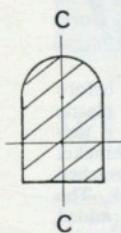
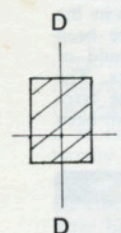
Scale drawings for DH9A model appear on next two pages



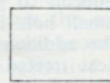
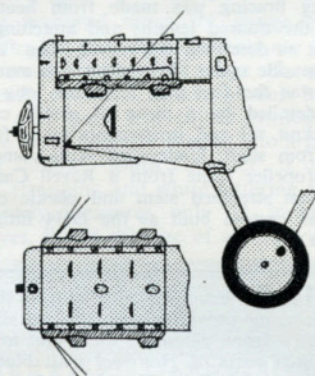
Note small size of fuselage serial

B Wheel covers painted maroon when fitted
Wheels shown uncovered

Fuselage cross sections

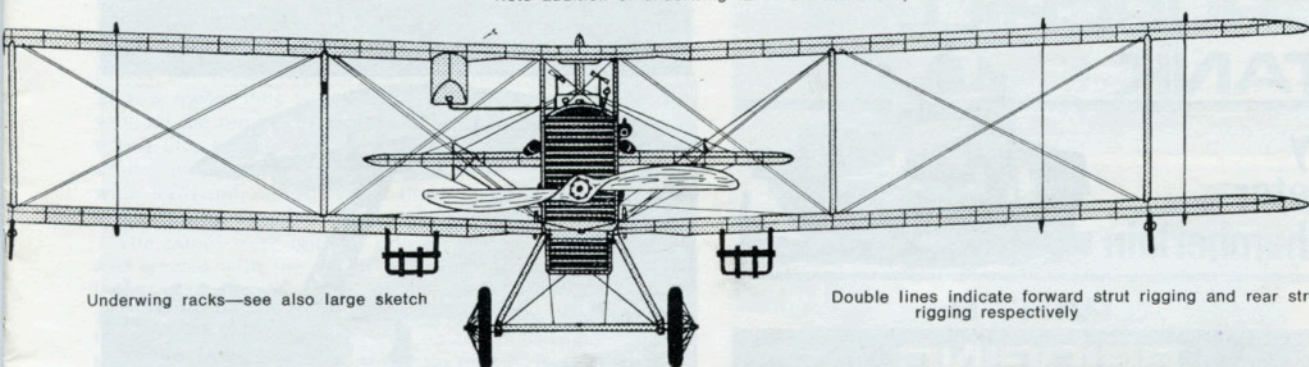


Detail of standard DH9A showing normal exhaust pipe detail and removable wheel cover in place



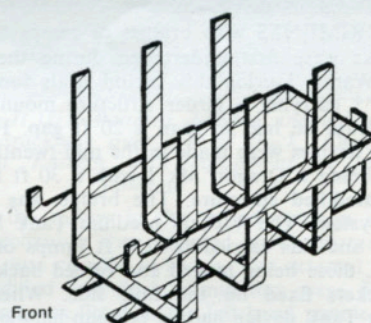
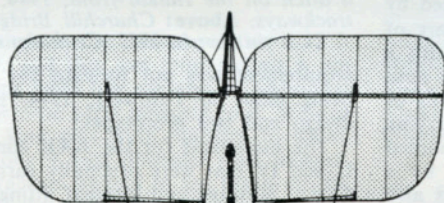
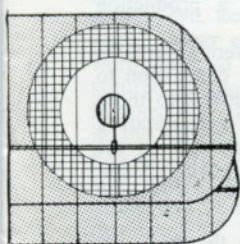
De Havilland DH9A, F2858:M, flown by F/O N. H. F. Unwin,
8 Squadron, 'B' Flight, Hinaidi, Iraq 1924-25

Note addition of underwing tank—starboard only



Underwing racks—see also large sketch

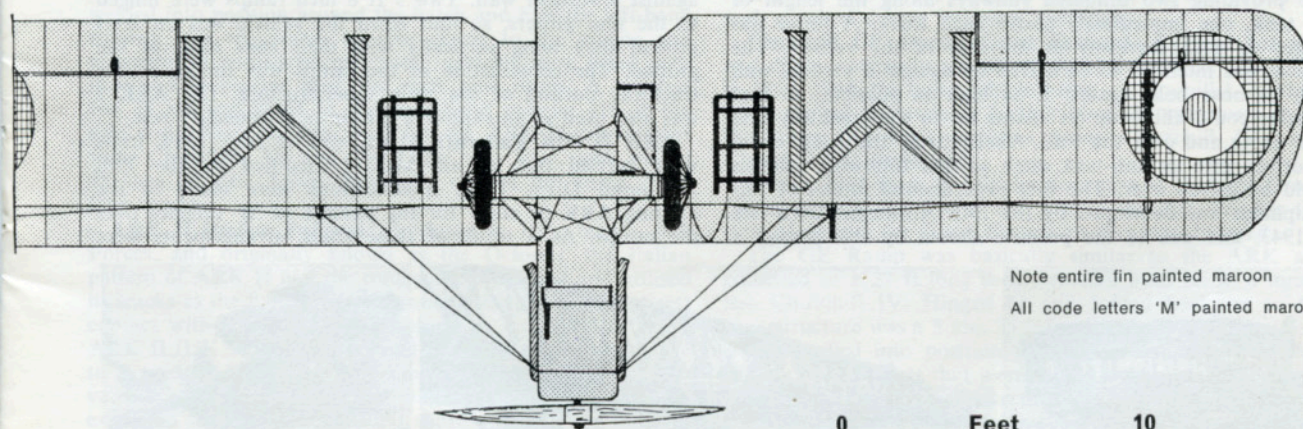
Double lines indicate forward strut rigging and rear strut rigging respectively



Front

Sketch of underwing racks as fitted to F2858 (not to scale)

Drawings by Richard L. Ward



Note entire fin painted maroon
All code letters 'M' painted maroon

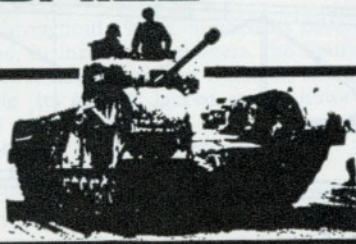
Length : 30 ft
Span : 46 ft
Height : 10 ft 9 in

March, 1968

0 Feet 10
1:72 Scale

THE CHURCHILL TANK

by
Peter
Chamberlain



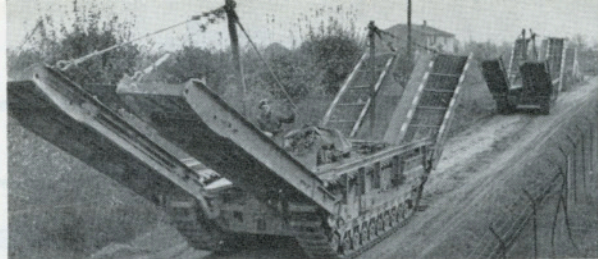
PART 9

BRIDGING VARIANTS

EXPERIMENTS with bridges or ramps to be carried by tanks were first undertaken during the latter part of World War I. During this period trials took place with a Mark V* carrying a girder structure mounted on its nose which could be laid to span a 20 ft gap. Further trials of bridging devices were made in the mid-twenties, the carrying vehicle being a Dragon Mk I with a 30 ft bridge mounted on its modified structure. The bridge was launched by a pulley system. The Vickers Medium Tank Mk II was also adapted and this carried two 18 ft ramps on either side of the hull, these being hinged and folded back and supported by brackets fixed on the hull side. When required the Medium Tank device had to be man-handled into position.

Interest in self-propelled bridging equipment seems to have waned until the outbreak of World War 2, and with the lessons learnt at Dieppe began the evolution of a new series of projects. These fall into two groups—ramps that utilised the hull of the tank as a part of the device, and mobile bridges that could be launched from the carrying vehicle. Most numerous were the ARKs, these initials being derived as an abbreviation from 'Armoured Ramp Carrier'.

Churchill ARK Mk I: The ARK I consisted of a turretless Churchill tank on top of which was mounted a superstructure providing two timbered runways along the length of the tank, one immediately above each track. A ramp was hinged to each trackway at the rear of the vehicle. The vehicle was intended to be driven up against a vertical wall with its nose held against it as high as possible, so that vehicles could climb up its ramps on to the trackway and then on to and over the wall. Alternatively the ARK could be driven into an anti-tank ditch so that following vehicles could be driven over. The first experimental model of this equipment was developed by the 79th Armoured Divn late in 1943, and due to the promise shown by this project a



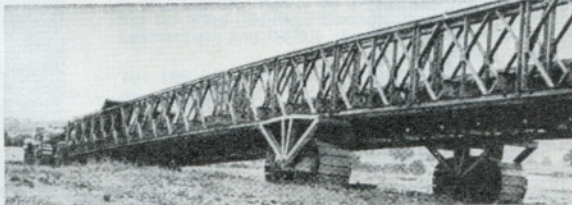
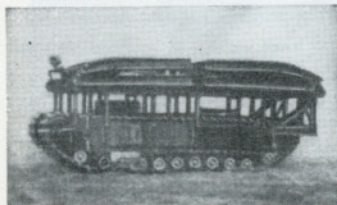
Top: Two ARKs Mk II (Italian Pattern) moving up to span a ditch on the Italian front, 1944. Note widened left-hand trackways. **Above:** Churchill Bridgelayers with No 3 Bridge in Korea, 1952. Centurions in background.

requirement was put forward for 50 ARKs, arrangements being made in February, 1944, to prepare a production design and two prototypes.

The hulls used for the ARK conversions were Churchills II and IV that were originally earmarked for conversion to CDLs. Stowage and internal fittings were identical to those of the AVRE hull; the turret and turret basket were removed and part of the rotating base junction left exposed on the hull floor was enclosed by a spherical cover. Slight rearrangements of tow rope and exhaust system were necessitated by the presence of the superstructure.

The timbered trackway was raised above the track by brackets and girders and hinged to the front girders were two ramps 3 ft 5½ inches long, in line with each trackway. The front ends of these ramps rested on the tracks above the front idlers, whilst a projection on the underside of each ramp engaged the spuds of the track giving a ratchet action, so that the tank could be driven forwards with the front ramp oscillating up and down, this feature assisted in maintaining the vehicle in an inclined position when driven up against a vertical wall. Two 5 ft 8 inch ramps were hinged to the rear girders, so that when the vehicle was on level ground they hung vertically with their ends clear of the ground. The construction of the ramps was similar to the trackway portion of the main superstructure. The ARK I was also used as an explosive carrier as a secondary role.

ARK II (UK Pattern): At the end of July, 1944, trials were carried out on an ARK I modified by the 79th Armoured Divn. These modifications were made to the existing ARK to allow for the passage of 'B' vehicles over the ramps. As a result of these trials, arrangements were



Above, left to right: Rare pictures of Woodlark, Churchill with Mobile Bailey Bridge, and Churchill III crossing Lakeman Ark (All photos courtesy Imperial War Museum).

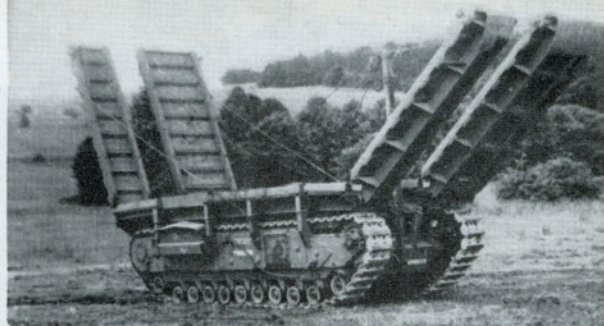
made for converting all existing ARK I to ARK II. This consisted of various alterations to the trackway superstructure and included the widening of the left-hand trackway from 2 ft to 4 ft; the right-hand trackway remained 2 ft wide. Hinged to the front transoms were two short 3 ft 7½ inch ramps, in line with each runway, to which in turn were hinged two ramps each 12 ft 6 inches long. Two ramps, each 12 ft 6 inches long were hinged to the rear end of the runway, all the ramps corresponding in width to the runways to which they were linked. The construction of the ramps was similar to that of the runway except that in the case of the wide left-hand ramps, where three longitudinals were provided to accommodate the increased width.

The ramps were initially raised from the stowed position and erected with the aid of a second vehicle and crane. In the erected position each rear ramp was supported by a ½ inch diameter tie rod with eyes at both ends, connected to 2 inch diameter pins welded on the outside near end of the ramp. The other ends of the tie rods were held by plugs which formed the tongues of the quick release locks welded to the vehicle. The plugs could be withdrawn simultaneously by means of a quick release assembly operated from within the vehicle.

To support the front ramps in the erected position a 12 ft long king post was fitted, and this was mounted on a pin passing through the existing front tow eye and an additional similar eye, welded on the nose plate adjacent to it. Welded at the upper end of the king post were brackets to which were shackled two 8 ft long ¾ inch diameter steel hawsers secured by shackles to brackets welded to the inside of the forward end of each front ramp. To secure the front ramps in the erected position a 31 ft long ¾ inch diameter steel hawser with a length of chain shackled to it at each end, was passed round a 5 ton snatch block mounted at the upper end of the king post. One of the chains was passed through a 'U' bracket welded near the centre of the second transom from the front of the runway, and secured by a shackle. The other was held by a Covenanter quick release hook mounted centrally on the roof plate at the rear. The quick release hook was operated by a Bowden cable mechanism from within the vehicle.

The turret aperture in the hull roof was covered by a 14 mm thick blanking plate welded in position. This plate incorporated a double flap hatch cover giving access to the centre compartment. A rectangular conning tower was welded into position around the hatch and half the left-hand runway was removable to give access to the engine and transmission compartments. Some vehicles were fitted with independent release gear for each rear ramp. A wireless No 19 set was fitted in the right-hand pannier aft of the side door. Basic vehicles used for the ARK II conversions were Churchills III and IV. Crew was four, and weight 38 tons 10 cwt. Trials were later carried out using 20 ft long ramps.

ARK II (Italian Pattern): Produced in Italy by the ME Forces, and originally known as the Octopus, the Italian pattern of ARK II had the trackguards removed and utilised its tracks as the fixed runway, crossing vehicles making direct contact with the tracks and roof plates. In contrast to the ARK II (UK Pattern) which had the built-up superstructure to provide a trackway. The gap between the front of the vehicle and the front ramps was covered by a platform extension instead of articulated short ramps as on the UK pattern. The front and rear ramps were of American origin, of equal length and interchangeable. Two different types could be used, the M1 which was 15 ft 3 inches long, and the M2, 12 ft 3½ inches long. Two king posts, one at either



Top: ARK Mk II (UK Pattern) showing unequal width of trackways and trackway over top of track. **Above:** The Churchill Great Eastern with equipment in travelling position.

end, supported the ramps in the raised position and the quick release mechanism was mounted on the turret blanking plate, which was circular in shape. The external exhaust system was modified and flash eliminators were fitted. A wireless No 19 set was fitted in the left-hand pannier aft of the side door. Weight of this version was 39 tons and a crew of four was carried.

Foldups: Developed in 1945-46, this had a family resemblance to the ARK II. The ramps were of original American trackway bridge, and were launched by rockets from the carried position in which they were folded on top of the ARK. This was experimental only.

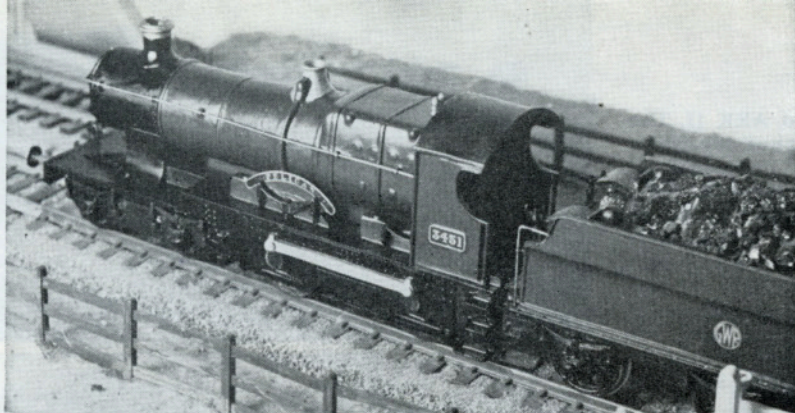
Folding ARK: This was the Italian/UK pattern ARK with extensions to each of the folding sections; each extension was 9 ft long and the extensions were either hinged and folded on top of the original ramps or stowed separately and attached during bridging operations.

Churchill GE Ramp (Great Eastern): Evolved for wall and ditch crossing in assault, trials of this device took place in May, 1944, the basic vehicle being a Churchill I. As these trials proved successful a further 10 prototypes were made, this time the basic vehicles being Churchill IVs with Churchill VII suspension.

During 1945 these 10 vehicles were sent to 21 Army Group for user trials, but due to the lack of requirements for this type of device, the Great Eastern project was dropped.

The GE Ramp was basically similar to the ARK and consisted of a 27 ft long superstructure built on to a turretless Churchill IV. Hinged to and folded back on to the superstructure was a 5 ton, 25 ft long ramp, which was raised and propelled into position by two groups of 3 inch electrically fired rockets that were fitted to the ramp's free ends. Also fitted were two concertina shock absorber boxes to absorb the impact of the falling ramps. The rear 13 ft ramp of 2 tons was set into the dropping position and released by means of electrically operated blow-out pins. Following vehicles could then mount the rear ramp and cross the operating vehicle.

Continued on page 270



Pelican, 3451, is the last of the 'Bulldog' class variants which can be built from Airfix City of Truro kits, using Prairie tank wheels.

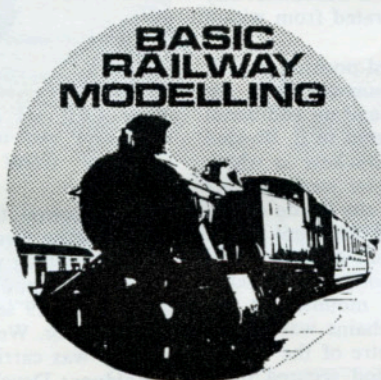
plate after the splashers and all other detail above the footplate forward of the cab had been removed. Airfix Prairie tank coupled wheels were used and once again I was lucky in getting a friend with a lathe to drill a hole in the centre of the face of each wheel to take the small pieces of dowelling which helps fix the extended axles in place. I used wooden dowelling similar to cocktail sticks and found a No 50 drill was the right size. Fig 2 may help in explaining how the outside cranks are fitted to the Prairie

The 'Bird' series Bulldog

I HOPE readers will bear with me if I continue with 'Bulldog' conversions which have already occupied the Basic Railway Modelling spot in two issues of the AIRFIX magazine, December 1967 and February 1968. I would like to complete the saga this month with a reference to the final batch of deep frame Bulldogs. These were numbered 3441-55 and as I mentioned in the December issue, they were all named after birds.

This batch of Bulldogs was built in 1909-10 and differed from earlier versions by the deeper frames as illustrated in Fig 1. There are two ways in which they can be tackled; either construct a completely new pair of frames using 40 or 60 thou plastic card or deepen the *City of Truro* frames with pieces of plastic card. I chose the latter method as I saw certain advantages in this, not least the possibility of preserving a token amount of rivet detail which otherwise would be lost with new frames made out of plastic card.

First of all remove the brake rigging and the tie-bar between the lower frame extensions, then remove the four 'knobs' representing the bearings for the springs. Keep these and the brake rigging carefully to one side as they will afterwards be used again. The gaps in the frames between the coupled wheel axles and at either side of the axles between the front and rear steps I filled in with pieces of 40 thou plastic card cut accurately to shape and fit. The frame thickening either side of the coupled wheel axle holes was extended downwards with strips of 10 thou plastic card. After leaving overnight for the cement to thoroughly harden, the frames were cleaned up with craft knife and needle



BY **NORMAN SIMMONS**

file. The frames were completed by refitting the bearings for the springs and the brake rigging, the latter reduced in height to allow for the smaller diameter coupled wheels.

With two 'Bulldogs' each using two pairs of *City of Truro* frames already completed and another pair of frames spoilt by a mishap when experimenting with the curved-frame Bulldog, my stock of spare *City of Truro* frames is running low. I decided, therefore, to experiment with constructing a pair of inside frames from 60 thou plastic card instead of using spare *City of Truro* frames as I had in the past. I am glad to say I found these worked out every bit as satisfactory and were very easy to do. The *City of Truro* frames were used as a master and the 60 thou plastic card was simply cut and drilled an exact copy, leaving out the steps and other superfluous detail. The axle holes were drilled out 13/64 inches, and the inner frame assembled as before and cemented to the underside of the foot-

plate wheels.

It is a tricky business fitting the outside frames, the extended axles, and the outside cranks in place, bearing in mind that the cranks have got to be properly quartered, but this being my third 'Bulldog' conversion I am beginning to get the knack of it. I find it best to assemble the coupling rods to the outside cranks first, place a Peco 00/6 fibre washer over the 'D' shaped pin of the crank (this gives the crank just the right amount of extra clearance required outside the frame) and cement the pin into the extended axle cut from the *City of Truro* coupled wheel. The back of the extended axle can then be drilled with a drill appropriate to the size of the dowelling you are using (in my case a No 50 drill) for about half the depth of the extended axle and the parts are ready for final assembly. This consists of cementing the outside frame and the extended axles on one side of the locomotive at a time and this I prefer to do in one operation. Place a quantity of cement on the footplate edge where the frame is to go and a small blob of cement on the face of each of the coupled wheels. Slap the frame in place and before the cement on the wheel centres has had a chance to dry, place the extended axles through the axle holes in the outside frame and on to the dowelling in the wheel centres. Twist them until they are properly quartered. You can check the quartering by looking at the back of the wheel to see that the cranks line up with the crank pin boss on the wheel. Whatever happens, make sure no cement from the face of the wheels comes into contact with the back of the frames as, sure as eggs are eggs, the cement will work its way into the

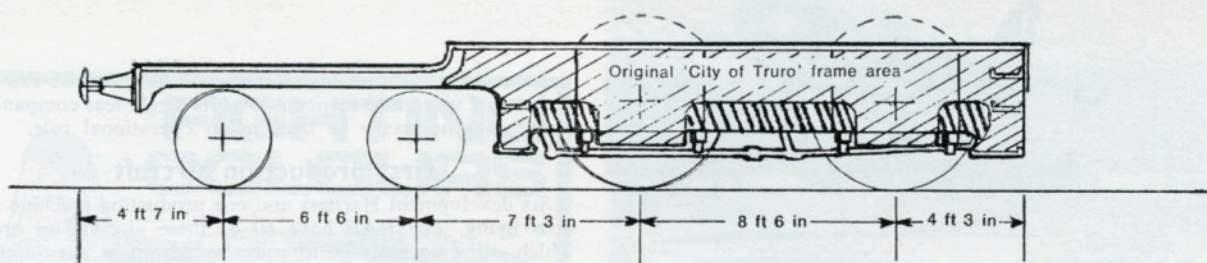
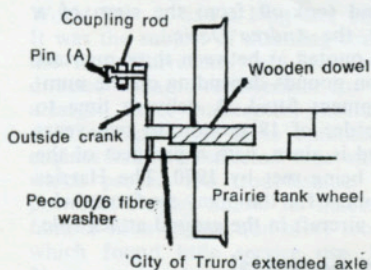


Fig. 1. 'Bird' series Bulldog, Nos 3441-55



Plastic card inserts to deepen frame

Fig. 2. Cross-section showing method of fitting extended axles and outside cranks to Prairie tank coupled wheel—not to scale



axle holes and gum up the works. If you have this misfortune, strip down and start again.

To make sure everything is setting properly, keep the wheels revolving from time to time and check that the outside cranks are flat against the frame sides. There should, of course, be no binding at any point but I do find that moving plastic parts behave most peculiarly at times when waiting for the cement to dry. Sometimes all seems well then for no apparent reason they stiffen up and trouble looms large, then a little later it clears itself and all is well again—it's all rather like Donovan's mountain! I think it must all be due to expansion and contraction of the plastic when it is in a semi-soft state due to the action of the cement. If it is of any consolation, I usually find things sort themselves out when thoroughly dry and if, even at this stage, everything is not quite so perfect as it might be, a small drop of lubricant can help ease the tight spots so that in time they disappear.

With the coupled wheels and outside frames in place, construction can proceed with the cab—standard *City of Truro*—and the *City of Truro* splashers can be refitted after cutting down to 4.5 mm in height at their centres. The sandboxes can also be refitted. Some 'Bulldogs', 3341 *Blasius* for instance, which I modelled for the December issue, did not have the City

type sandboxes but I believe all the 'Bird' type 'Bulldogs' did. At this point I fitted the engraved brass nameplates and numberplates, using Britfix epoxy resin.

There are a fair assortment of Bird nameplates available. The Western Series available from James T. Fraser, 6 Seawall Cottages, Dawlish, Devon, has the following in stock at the time of writing:

3442 Bullfinch	3448 Kingfisher
3443 Chaffinch	3450 Peacock
3444 Cormorant	3451 Pelican
3447 Jackdaw	3454 Skylark

In addition, Eames of Reading include the following in their list of plates:

3441 Blackbird	3452 Penguin
3449 Nightingale	3453 Seagull

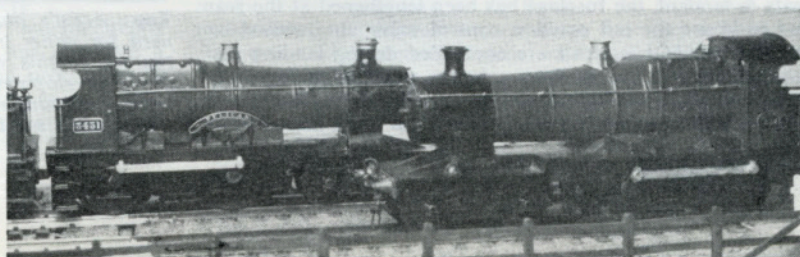
If you write to either of these suppliers, please mention AIRFIX magazine. All the 'Birds' survived to be nationalised so there is not much to choose between them when it comes to their length of life. *Seagull* and *Skylark* were the last two 'Bulldogs' of any sort to survive and they were both withdrawn in November, 1951.

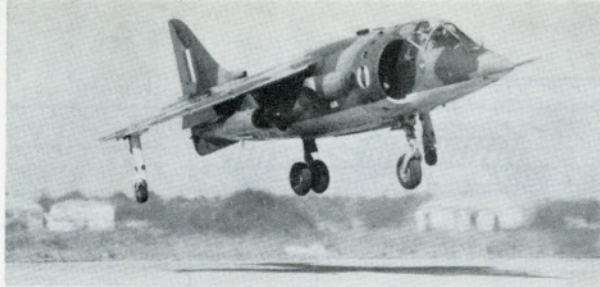
The 'Birds' had the standard No 2 boiler and the same modification as described in the December issue is required to adapt the *City of Truro* boiler to this model, that is remove the chimney and safety valve, remove 1 mm from the top and bottom edges of both of the boiler halves and cement together ensuring that the smokebox is circular by inserting

Below: Another view of Pelican. **Bottom:** The 'Bird' variant (left) compared to the basic straight-frame 'Bulldog' covered in our December issue.

17 mm discs of plastic card during assembly and holding the boiler halves together with tight-fitting elastic bands until the cement hardens. The *City of Truro* chimney should be used for this model as the 'Birds', in common with most of the 34XX 'Bulldogs', had copper capped chimneys. Some of the 'Bulldogs' had shortened safety valve bonnets but I regret being unable to confirm which ones. It is as well to find a photograph of the particular locomotive you are modelling to check with but should a shortened safety valve bonnet be required, this can easily be adapted by cutting the top off the *City of Truro* bonnet, removing about 1 mm and cementing the top back in place.

As with all the tender locomotive conversions I have described, I rely on K's motorised tender chassis as the motive power. This is fitted into a modified Airfix *City of Truro* tender as described in the June, 1967, issue of AIRFIX magazine. This motor gives adequate performance for the sort of duties expected of a 'Bulldog'. In their latter years they were used on a variety of passenger and freight work on main and secondary lines and they were widely scattered over practically the whole of the GWR. My notes include references to 'Birds' shedded at Plymouth, Leamington, Taunton, Neyland, Didcot, Cheltenham, Exeter, Swindon, Pontypool Road and Hereford. As a model locomotive the 'Bulldog' is far more useful on a layout than a 'City' since they covered a longer span of life, were used on a greater variety of duties and because of their larger numbers they were very often to be seen.





XV277, one of the six Harrier development aircraft at Dunsfold, landing on the taxiway. Underwing armament includes Matra SNEB rockets, shown installed on this machine.

At a recent demonstration held at Hawker Siddeley's airfield at Dunsfold, the Harrier GR1 was shown to the Press for the first time. Several new facts about the aircraft were given and in a talk after the flying display veteran test pilot 'Bill' Bedford confirmed that efforts were being made to produce an export version as well as a two-seat trainer.

The most significant thing to come out of the new facts and figures released was the fact that the Harrier's Rolls-Royce/Bristol Pegasus engine has been improved and that a 60 per cent improvement in the aircraft's cost effectiveness can be expected. Further thrust increases planned to follow



could result in an even greater improvement of the Harrier's payload/range capability. One of the pre-production batch of aircraft at present undergoing trials at Dunsfold has exceeded the speed of sound and more than 2,000 flying hours have been accumulated since the aircraft and its predecessors in the Hawker P1127 family have flown.

With a 5,000 lb external load made up of either bombs, rockets, napalm, cameras or extra fuel tanks, the Harrier's radius of action is comparable to conventional aircraft operating from vulnerable concrete runways. Its 2,000 nautical mile ferry range can be extended with in-flight refuelling—already rehearsed at heights up to 40,000 ft as can be seen from the accompanying photograph.

Two-seat Trainer

Although it has been known for some time that a two-seat version of the Harrier was projected by Hawker Siddeley, confirmation that an order for ten of these had been placed was welcome news. The aircraft which is due to fly later this year looks considerably different from the original P1127 from which it has been developed. Apart from having two seats in tandem, the fuselage has been lengthened at the rear end to house the tail reaction control valve, the method by which the VTOL aircraft are controlled during landing and take-off. This is mounted on a boom so as to preserve the same control power/inertia ratio as that of the fighter. A new ventral fin shape has also been added. Like most opera-

tional trainers, the two-seat Harrier will have similar characteristics of speed and manoeuvre as its single-seat companion and can if necessary be used in an operational role.

First production aircraft

Six development Harriers and one production machine are now flying. The RAF have 60 of these aircraft on order which will eventually go to equip squadrons in Air Support Command. The first production aircraft is serialised XV738 and the development batch are XV276 to '281. These, together with the prototype Harrier XP984, were on show at Dunsfold.

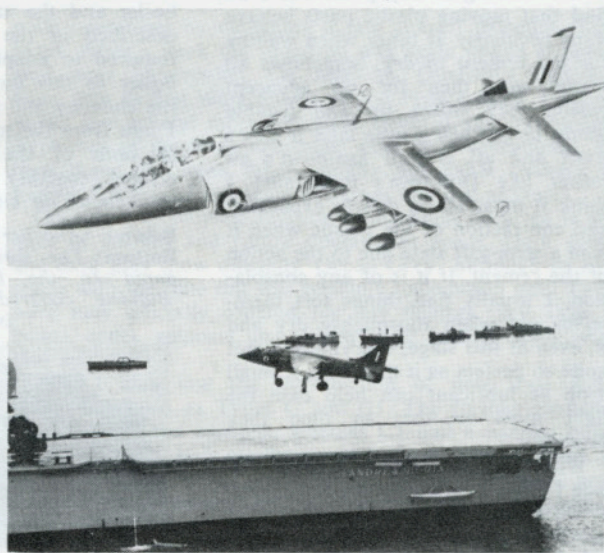
More than 40 pilots from British, American and German Services have flown aircraft of the P1127 family and over 10,000 take-offs and landings have been made from all types of surfaces including platforms on ships at sea. These last were carried out recently at the request of the Italian Navy when a Harrier landed and took-off from the stern of a cruiser of the Italian Fleet, the *Andrea Doria*.

Price per aircraft is now quoted at between three-quarters of a million and one million pounds depending on the number ordered and the equipment fitted. A delivery time to foreign air forces of the order of 18 months to two years from the order being placed is given, with a prospect of the first overseas commitment being met by 1970. The Harrier is seen as a Hunter replacement for the many air forces who now employ this venerable aircraft in the ground attack role.

Export potential

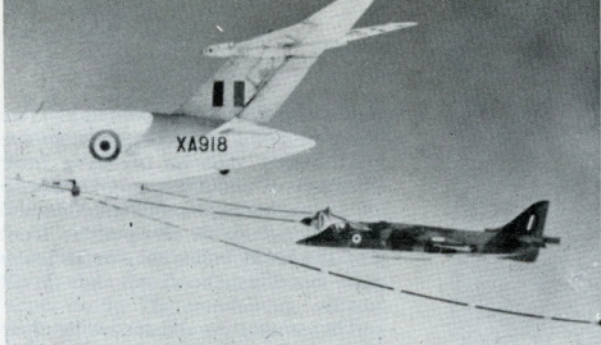
Of particular importance in the export role, the Harrier looks like being the best possible seller to smaller air forces who have doubtless been influenced by the results of the Israeli-Arab war last June. The Israelis, too, have seen the potential of the Harrier or an aircraft of similar capabilities and it was widely reported in the Press recently that negotiations have been attempted to purchase Harriers for ground attack work in the Middle East.

Using to the full the Harrier's ability to land in a confined



Top: Artist's impression of the Harrier T2 which can be used for either training or operational flying. It will fly by the end of this year. **Above:** A pointer to the future—one of the development aircraft lands on an Italian cruiser during trials last autumn, demonstrating that the disappearance of carriers needn't necessarily clip the Navy's wings.

AIRFIX magazine



In-flight refuelling trials. One of the development batch of six Harrier GR1s rehearsing with a Victor tanker on one of several sorties which were completed up to 40,000 feet.

space and be hidden under camouflage, both natural and man-made, in the very shortest time, the arms buyers of the world are naturally very interested in seeing how the aircraft will perform. In his talk after the flying display at Dunsfold, 'Bill' Bedford said that Hawker Siddeley were aware of this and cited the Russian efforts to produce a similar aircraft using vectored thrust engines. He added, 'I am sure that with this aircraft, Britain is on the verge of a breakthrough as important as when the gun replaced the bow and arrow and the jet replaced the propeller. This is reflected in the extreme sense of urgency and enthusiasm which now pervades Hawker Siddeley Aviation at all levels on this project.'

Flying display

Four of the development aircraft took part in the flying display flown by Hugh Merewether, Duncan Simpson, John Farley and Squadron Leader Adams who, although an RAF pilot, is at Dunsfold to assist with the development testing of the aircraft. All except one of the aircraft, XV276, were fully equipped with recce pods, guns, rockets, bombs or fuel tanks. For fifteen minutes they showed their paces in a display that in some of the fast runs must have been near to Mach 1. All of the take-offs and landings took place from one of Dunsfold's taxiways and most of the manoeuvres were in a very confined space.

The full programme showed short take-offs, transitions, high-speed passes, limited aerobatics, 360 degree turns and hovering manoeuvres before all four come in for vertical landings.

Found — an Afghan Hind

AIRCRAFT preservation enthusiasts will be delighted to know that a Hawker Hind, pre-war day bomber of the RAF, has been found in Kabul, Afghanistan, where it has lain derelict for a number of years.

The existence of the Hind was discovered in late 1966 by J. M. Bruce, known to many readers for his authoritative writings on early aircraft, and who has been appointed assistant keeper of the RAF Museum at Hendon. He remembered seeing a letter in an aeronautical magazine written by one of the pilots who ferried the Hinds to Afghanistan. It stated that at that time there were several ex-World War I British aircraft at Kabul.

The RAF Museum authorities contacted the British Embassy in Kabul in an attempt to discover whether any of these machines still survived. They did not—but the Hind did. Negotiations for the return of the aircraft were started and the Royal Afghan Air Force immediately offered it as a present to the RAF as part of the 50th Anniversary celebrations which will take place this year.

The Hind, which is one of 20 supplied to Afghanistan in 1938, is still in the markings of the Royal Afghan Air Force.

March, 1968

It has been completely refurbished by them, even down to the provision of spare drums for the Lewis machine gun. It is not known if the aircraft is in flying condition but this is doubtful as it must have been out in the open for some considerable time. A Hercules aircraft of Air Support Command on a Far East training flight picked up the old aircraft from Kabul in January for delivery to RAF Abingdon to take its honoured position in the RAF's Golden Jubilee. Later it will be transferred to the RAF Museum at Hendon.

Derived from the Hawker Hart, the Hind saw active service right up to the early stages of World War 2. Three squadrons, Nos 18, 21 and 34, were equipped with the type when it first entered service in 1935 and 528 were built.

Runway to be built at Lympne

SKYWAYS Coach Air, the owners of Lympne airfield on the south coast, which is now almost 50 years old, recently announced that they had received planning permission to build a permanent runway 4,500 feet long and 90 feet wide.

The new runway, which will be connected to the terminal area by a 45 foot taxiway, will incorporate three circular turning points of 150 feet diameter, one at each end and one at a convenient point in the runway itself.

The completion of the runway on an airfield which has been traditionally grass covered for so long will provide Skyways with better facilities for their Hawker Siddeley HS748 short haul airliners which do excellent business in the summer months ferrying passengers to and from continental holiday resorts. More than 1,000,000 passengers have passed through Lympne since the airfield was acquired in 1955.

ARE YOU A KIT CONVERTER?

We have many letters from readers requesting back copies of AIRFIX MAGAZINE containing conversion articles. Back copies of some issues are still available for the benefit of readers who may have missed or mislaid earlier editions. For example, here are some of the practical articles which have appeared.

1965: September — Jeep conversions and Battle of Britain colour schemes. **1966: July** — RF-4C Phantom conversion. **September** — Matador variants. **1967: June** — Mosquito profile. **July** — Soviet missile tank. **August** — Early Churchills. **September** — Avro York and German half-tracks. **October** — Bus models in 4 mm scale. **November** — Japanese tankette and 'Daring' conversions. **December** — Halifax and RNAS Camel. **1968: January** — Tram model and M12. **February** — DH9 and Matador conversions.

Would readers please note that all issues not listed above are now out of print and can no longer be supplied.

Back copies cost 2s each (including postage) for all copies up to and including September, 1966. From October, 1966, onwards the cost is 2s 6d an issue, post paid. Please address all requests for back copies, together with your remittance, to our circulation department at SURRIDGE DAWSON & CO (PRODUCTIONS) LTD, PUBLISHING DEPT, 26 ABERDOUR STREET, LONDON SE1.



THE natural setting for the Matador Crane truck conversion (August, 1967, issue) is a timber yard, which makes a good scene for any rail or roadway layout, allowing lots of detailing in a small area together with the bonus of an industrial siding to be shunted.

My yard was constructed using a rectangle of hardboard 12 inches by 14 inches as a base, strengthened by 2 inch by 1 inch strips of wood beneath front and back edges. Later on I will fit this into my own railway layout. However, you can alter the shape and, to some extent, the area to fit the available space on any layout.

One of the photos shows a view across the whole yard. The stiffleg derrick is positioned so that it can be used to load and unload railway wagons and lorries and also reach fairly close to the lumber storage shed. Timber can be moved across to the sawing shed—the larger pieces by the crane truck, the smaller sizes on a hand cart. The yard office and a small tool store complete the main structures. The yard is fenced off, with an operating gate where the railway siding enters the property, and there is a large sign board displaying the firm's name.

If the size or shape of your yard is to be different from mine you may need to modify the buildings to fit the space. If the siding is already in place on your layout try the buildings in various positions to find the most effective and realistic arrangement before finally fixing them in position.

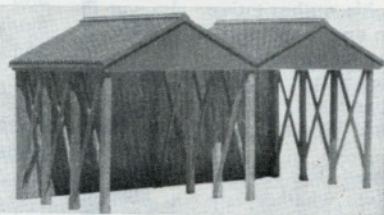
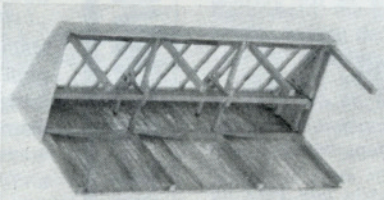
The structures are mostly based on a number of the Airfix railway kits. Save all kit parts not used and any pieces cut off the parts you do use. If you do this whenever you do a kit conversion you will soon have a fine selection of useful spare parts. A nice feature of this sort of conversion is that it can be kept very simple if you are a beginner or want a quick pro-

ject to fill in an unused corner.

Main Shed

This uses parts from the Airfix service station kit together with 1 mm thick card and some stripwood, either balsa or hardwood. The roof from the kit is used as it is. Cut the bottom part away from the kit back leaving a piece as in Fig 1 (a fine saw is best for this as the plastic is tough to cut with a modelling knife). Scribe this piece vertically at 2 mm intervals on its outer surface to represent 6 inch planking—this will be the upper front part of the shed.

Make the back from 1 mm thick card cut to the shape shown in Fig 1



Above, top to bottom: Two views of the sawing shed, which incorporates parts of an Airfix platform canopy, showing the 'saw' and bench in the upper picture. The main shed utilises a service station roof, plus stripwood supports.

and also scribed for planking. Glue the front and back to the undersurface of the roof with an overhang front and back of about 1 mm. Glue a strip of 1 mm thick card, 1½ mm wide and long enough to fit between the front and the back, under the roof at each side, bevelling the front ends to fit neatly.

The supporting beams, with their diagonal braces, at each end and in the centre of the shed are an effective part of the model and are easily built up. First cut the 12 vertical beams from 3/32 inch square stripwood. The easiest way is to cut the three rear ones first, measuring them against the back to get the exact size—note that the end ones fit inside the side strips and are bevelled at the top end to fit neatly against the undersurface of the roof. Then make the remaining uprights the same size as the corresponding rear ones. Glue all the verticals in place taking care to keep them square and true—this requires a little patience but is not really difficult. Complete the building by adding the diagonal braces, which are 1 mm wide 1/32 inch thick balsa strips.

I painted the roof matt black, the upper parts a brownish red colour (which I also used for the other structures) and the back of the shed and the wooden uprights and braces with a thin wash of black/brown paint to give a weathered appearance.

Office and Tool Shed

These are respectively the coal office and the platelayer's hut from the Airfix trackside accessories kit. They are assembled exactly as in the kit instructions except for the sign on the office and for the windows. I cut a length from each end of the signboard (part 34) so that it measured 25 mm and cut one of the signs down to 'OFFICE' only, making it the same length as the board and then glued it in position on the front of the board.

The windows (parts 1, 25 and 27) I mounted the reverse way round to that shown in the kit instructions and from the inside of the walls instead of from the outside. This gives a neater appearance. Then glue transparent plastic material behind the windows.

Sawing Shed

This is based on the Airfix platform canopy. I had originally intended to use half the canopy (the canopy being divided into two along its length) but I decided this would be a rather longer building than I wanted, so I shortened

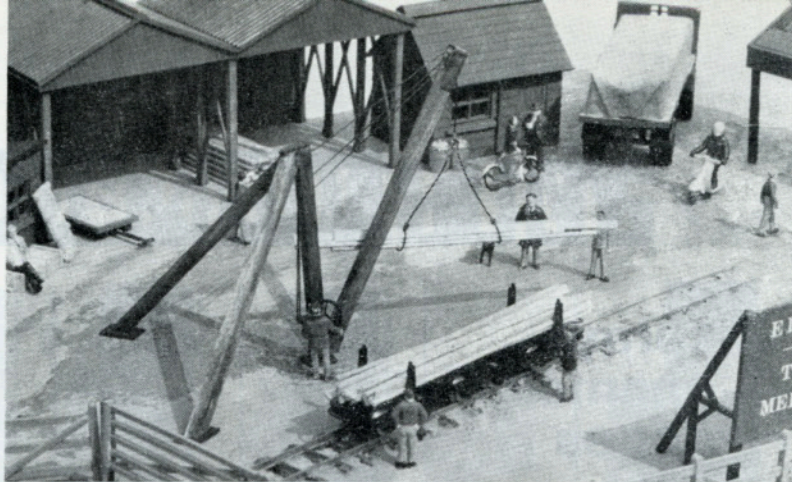
it a little.

Take one of the kit ends (part 17 or part 42) and cut off the lower 5 mm using a fine saw and taking care to make a neat cut. Touch up any roughness of the edge with a fine file. This end and two of the roof trusses (parts 1 and 2) should each now be cut vertically down the centre. Next cut one of the sides (parts 12 or 13) down to 114 mm length—this removes one inter-roof truss segment from one end, and then cut the lower 5 mm from the shortened side.

Trim off part of the downward projections from the lower parts of the roof trusses so that the slots are only 3/32 inch deep. Cut two lengths of 3/32 inch square stripwood 114 mm long for the main roof beams. Cut a length from one end of a lower roof section (part 14) leaving a piece 114 mm long and cut a piece of 1 mm thick card, 8 mm wide and 114 mm long, to form an upper roof section. Nine of the glazing bars (parts 18, 19, etc) are needed.

Begin assembly by cementing the four half roof trusses into the appropriate sockets on the back surface of the side, then add the two half ends which should be glued to the two end half roof trusses. One of the lengths of 3/32 inch square stripwood is notched in the appropriate positions so that it will fit into the slot beneath each half roof truss. This strengthens the structure and allows it to be squared up before assembly proceeds any further. The second length of 3/32 inch square stripwood is glued in position beneath the half roof trusses at the back so that it will be flush against the back wall of the building.

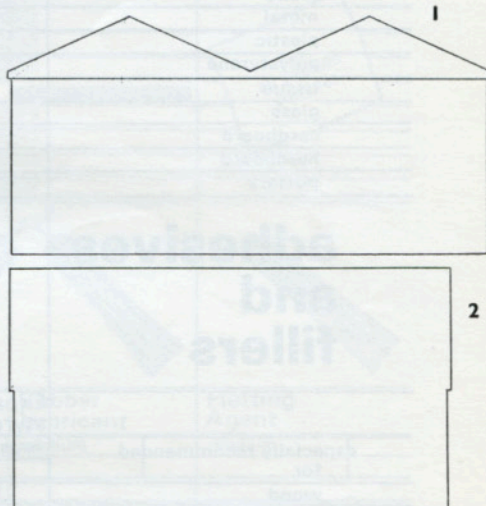
Next glue the lower roof section in position together with a rectangle of



Above: A close view of the yard showing the effective use of small details like dustbins and packing cases to achieve an air of casual realism. Figures have their bases removed. Details for building the articulated truck (top right) were given in our February, 1967, issue. **Heading picture:** General view of the yard showing baseboard and the lever for opening the gate.

thin transparent material 114 mm by 34 mm. Fix in place so that the lower 2 mm of the glazing is overlapped by the upper 2 mm of the lower roof section (which is notched to fit this) and fit the glazing bars in position. The lower ends of these bars fit into their notches in the lower roof section. Make sure these are square and then add the piece of card you have cut to form the upper roof section. These parts should have been painted before assembly as otherwise it is difficult to paint them without marking the windows.

The back is cut from 1 mm thick card to the proportions shown in Fig 2 and scribed vertically for the planking (ie, 3 mm intervals). Eight vertical supports are cut to length from 3/32



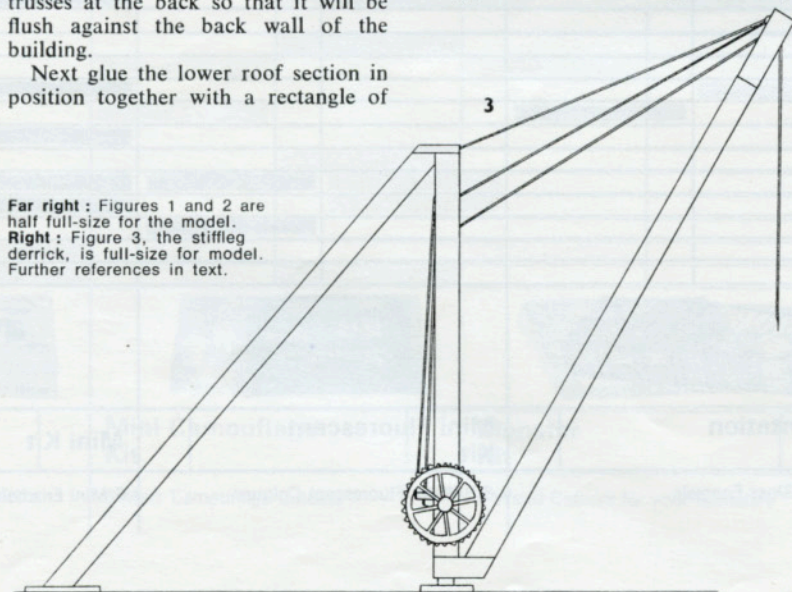
inch square stripwood and cemented in place. Reference to the photo showing the inside details of the sawing shed will make the above description easier to follow.

The saw bench was built up from balsa stripwood and 1/32 inch thick balsa sheet. A small cogwheel from a watch forms the circular saw blade. The company sign is the garage door left from the Service Station kit. Trim off the protrusions at the edges and any flash left on the back of the door, and paint the back matt black with the front browny red. The lettering is white Letraset (sheet 751). The two supports are the halves of one of the left over roof trusses from the Platform Canopy kit.

Stiffleg Derrick

This is built up from 1/4 inch square stripwood, 1/32 inch thick balsa sheet
Continued on page 270

Far right: Figures 1 and 2 are half full-size for the model.
Right: Figure 3, the stiffleg derrick, is full-size for model. Further references in text.



YOUR HUMBROL GUIDE TO

sprays enamels dopes



	Spray Enamel	Spray Fluorescent	Spray Racing Colours	Enamel	Fluorescent
especially recommended for	4oz. 16oz.	4oz.	4oz.	1/2oz. 2oz.	1/2oz.
wood					
metal					
plastic					
polystyrene					
tissue					
glass					
cardboard					
hardboard					
pottery					

adhesives and fillers



	Expanded Polystyrene Cement	P.V.C. Adhesive	Liquid Glue	Tissue Paste	White Adhesive
especially recommended for	large	medium	medium	medium	squeeze bottle
wood					
plaster					
metal					
rigid/polystyrene					
expd/polystyrene					
p.v.c. plastic					
hardboard					
glass					
cardb./paper					
textiles					
tissue					
balsa wood					
pottery					

paint kits



	Presentation Kit	Mini Fluorescent Kit	Mini Kit
	6 Basic Gloss Enamels	6 Brilliant Fluorescent Colours	6 Mini Enamels with M

SUCCESSFUL MODELLING

						
Enamel Colours	Railway Enamel	Clear Dope	Colour Dope	Sanding Sealer	Banana Oil	Hot Fuel Proofer
2oz.	1/2oz.	2oz.	2oz.	2oz.	2oz.	2oz. t.
		1/2pt.	1/2pt.	1/2pt.	1/2pt.	4oz. s.
						on all painted surfaces
						
Plastic Cement	Polystyrene Cement	Epoxy Adhesive	Body Putty	Plastic Wood	Rubber Lubricant	Flatting Agent
medium	medium	twin pack	large	large	medium	medium
large	large					
						on all rubber surfaces
						
Mini Camouflage Kit	Mini Camouflage Kit	Monster Kit	Authentic Colour Kits			
6 Matt Camouflage Colours	6 Matt Camouflage Colours	6 Weird Colours for your Monsters	A series of Authentic Military Colours			

HUMBROL · HULL · YORKSHIRE



GERMAN ARMY

by David Nash 1914-18

THE German World War I infantry, as produced by Airfix, are, to be precise, infantry of the 1910-1916 period. The spiked helmet (*pickelhaube*) was largely replaced in 1916 by the familiar 'coal scuttle' steel helmet, and by 1917-18 the 1915 model uniform was replacing the earlier 1910 pattern. Also, because of the economic blockade and the conditions of trench warfare, the equipment and clothing underwent some drastic changes in the latter half of the war. This article gives details for finishing the figures for the first two years of the war and the next will cover 1916 onwards.

The Airfix figures are of an extremely high quality, but with one or two minor alterations an even better miniature can be produced, and variety is also possible. The figures all have a type of cartridge box which was obsolescent when war broke out in August, 1914, this pattern then being issued only to reserve and second line troops. The rear skirts of the jacket are over emphasised and need to be pared down slightly with a craft knife. By using lead foil, pins and other suitable materials, one can attach such items as entrenching tools, bayonet scabbards and additional haversacks. Cut away the existing cartridge pouches and cement on new ones cut from card or plastic card. If you don't fancy cutting down pins, use heat-stretched sprue for the bayonet and entrenching tool.

The field grey uniform was introduced as the service dress of the German Army in 1910. Essentially the uniform was of a camouflage nature but it incorporated nearly all of the traditional features from previous blue uniforms.

The colour, field grey, was, strictly speaking, green with a grey tinge. In reality, however, the action of sun and

rain and the inequalities of dyes meant that the colour was anything between a light grey-green and an almost dark green-grey. Floquil make a perfect field grey in their military paint range (available from Victors) which takes very well on the plastic in the Airfix figures. Alternatively add a little white to Humbrol 31 to get a reasonable shade.

A complete uniform consisted of a jacket, trousers, greatcoat, *pickelhaube*, field cap, marching boots and equipment. The tunic was single-breasted with a turn down collar. The cuffs, dependent on regiment, were either of the Brandenburg or Swedish styles, the former being the most common. In the front of the skirts were pockets with flaps that slanted downwards from front to back. The edges of the collar, cuffs and cuff slashes, the leading edge of the tunic and the rear skirt ornamentations were piped scarlet. In addition to this, the Saxon regiments had the bottoms of the cuffs and skirts completely piped around in the same colour. The piping on the Bavarians' uniforms was bright red and not scarlet. A number of élite regiments, such as those of the Guard Corps, the grenadiers and a few of fusiliers, wore distinguishing lace (*litzen*), usually in white or yellow, on the collars and cuffs. The shoulder straps were field grey and were piped in a colour which was dependent on the Army Corps. These colours were:

White	Army Corps I, II, IX, X, XII (1st Saxon), I Bavarian.
Scarlet	Army Corps III, IV, XI, XIII, XV, XIX, (2nd Saxon), II Bavarian.
Yellow	Army Corps V, VI, XVI, XVII, III Bavarian.
Blue	Army Corps VII, VIII, XVIII, XX.
Light Green	Army Corps XXI.

The XIVth Corps had no specific colour and its regiments had shoulder strap piping of white, scarlet, yellow or blue.

The centre of the straps bore a regimental number or cipher, usually in red. The buttons were generally of yellow metal. They were carried on each of the pocket flaps; eight secured the front of the tunic and they were also to be found on the cuffs and the rear skirt ornamentation.

The trousers were made from the same type of material as that of the tunic. On the outside seams there was a thin line of piping identical in colour to that on the jacket. The greatcoat was produced in two colours; light grey for officers and dark grey for other ranks. The collar was of the turn down variety and the cuffs plain. The shoulder straps were the same as those used on the tunic, being detachable and merely changed from one garment to the other.

There were two types of head-dress, the *pickelhaube* and the field cap. The *pickelhaube* was made from leather or, more commonly, from pressed metal. It was polished or lacquered black. The metal ribbing, front plate and spike were generally made of brass, but a few regiments had theirs made of white metal. On each side of the helmet, where the chin strap was attached, were circular metal cockades. On the right side was the black-white-red (outside to centre) national cockade; on the left was the state cockade. The helmet had a protective covering of field grey or brownish-grey canvas which prevented reflection. This cover hooked under the rims of the helmet and was constructed so as to fit over the spike. On the front it bore a stencilled unit designation, consisting of the regimental number. In the cases of the Reserve and Landwehr units, a Roman R or L surmounted the Arabic numerals.

The second type of head-dress was the field cap, which was coloured field grey. The cap band (1 inch wide) and the piping on the crown seam were coloured bright red or scarlet. Two cockades were also worn on this cap. Both were at the front; the national one on the crown; the state one on the cap band. When on active service, the cap band was often concealed by a strip of field grey cloth.

The boots, belt, ammunition pouches and pack harness were made from unblackened leather. The pouches looped on to the belt, three on each side of the yellow and white metal buckle. Clipped and looped on

AIRFIX magazine

to the belt was a pair of leather braces which supported the cow-hide pack; the greatcoat being rolled and strapped on top of this. A blackened aluminium canteen was secured to the back of the pack. On the right side of the belt was looped a haversack and on to this was hooked a felt-covered water bottle. The entrenching tool and bayonet scabbard were attached to the left side of the belt and were strapped together to prevent rattling. The metal head of the tool was carried in a leather case. The bayonet knot was hung from the frog. This *troddel* was quite colourful and by intermixing red, white, yellow and blue on its four component parts, the wearer's company could be identified. I used tissue paper to depict the rolled greatcoat on top of the packs.

The three main grades of non-commissioned officers were distinguished as follows: *Gefreiter*, buttons placed on each side of the collar; *Unteroffizier*, gold or silver lace on the edges of the collar and cuffs; *Feldwebel*, both buttons on the collar and collar and cuff lace. The *gefreiter* and *unteroffizier* both wore the uniform of the private soldier but the *feldwebel* was dressed more in the style of an officer.

The officers' uniforms were similar to those of the men. Rank was indicated on the shoulder straps which



Above: Larger-than-life views of fully detailed Airfix Germans with all uniform alterations and details as given in this article. Note *litzen* on cuffs, rank badges on collars, cap covers, entrenching tools, *accoutrements*.

were made of silver cord, set off either by piping or a background in Army Corps colour. The pips and regimental insignia were of yellow or white metal. The *pickelhaube* was different in as much as the spike was taller and the whole item was of a better quality and finish, being protected by the usual field grey cover. Officers carried a straight-bladed sword with a yellow metal hilt, black scabbard and silver sword knot. Other items of equipment included pistols with holsters, map cases and field glasses. They very often wore riding breeches instead of the normal trousers.

The drawings give all the uniform details outlined in this article and how much you are able to incorporate on the tiny Airfix figures depends on your own painting skill. Using a very fine good quality (000 size) brush, I was

able to incorporate all the *litzen*, buttons, piping, and rank insignia, plus the regimental numbers on the helmet cover. If you can't manage some or all of these details, I suggest you restrict yourself to buttons, cuffs, and helmet number, which are the most prominent features. Choose a regimental number (eg, 71) which is easy to paint. For the helmet cover, I suggest Humbrol or Airfix dark earth lightened or darkened with a touch of white or brown—these covers tended to wash out after a time to almost a stone shade.

IPMS National Modelling Championships 1967

FOLLOWING some ten months of contests throughout the country the IPMS held its first National Modelling Championships on Saturday, November 25, at Maples' Clarence Restaurant, Tottenham Court Road, London.

Altogether, 154 members and guests assembled for this occasion together with over 170 models, of which 120 were entered for a final eliminating contest to gain entry to the Championship. The standard of modelling was very high indeed. Class winners were: Aircraft Class Senior: John Chisman, 1/32 scale Bf 109F.

Aircraft Class Junior: Clive Watson, 1/72 scale Mitchell (Airfix).

Military Class Senior: Ron Howes, 1/32 scale Skysweeper.

Military Class Junior: Michael Faulkner, 1/35 scale Chieftain.

Car Class Senior: Paul Binder, 1/32 scale Fardier de Cugnot.

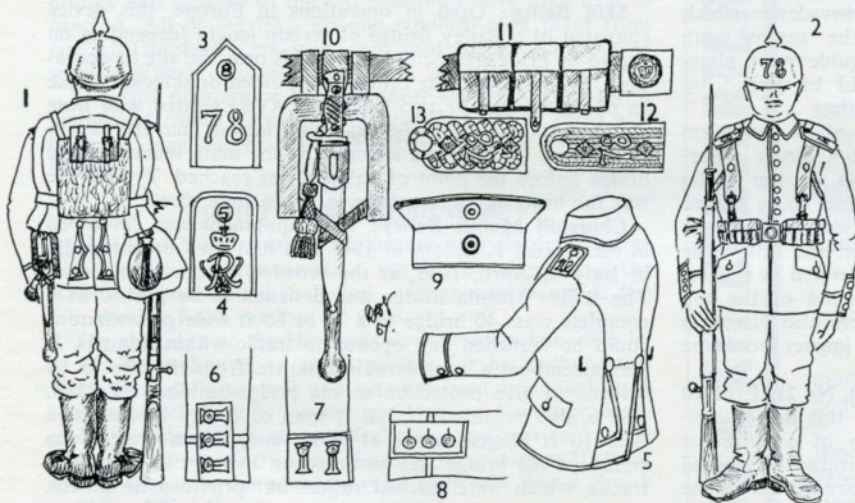
Car Class Junior: Michael Faulkner, 1/32 scale Ford Zodiac Pick-up (Airfix).

General Class Senior: Gerry Shutes, 7th Hussar on horseback.

General Class Junior: No entrants.

Each class winner was presented with a signed certificate together with a cheque for two guineas.

The National Champion was Fred Henderson.



Key to numbers: (1 and 2) Front and rear views of typical German infantryman, 1914, in full marching order. Note the cow-hide haversack and rolled greatcoat, also regimental number on helmet cover. (3) Shoulder strap pattern for all regiments except Saxons. (4) Saxon shoulder strap. (5) Saxon tunic; note cuff and coat tail differences. (6) Brandenburg cuff with *litzen*. (7) Swedish style cuff with *litzen*. (8) Brandenburg cuff, regiments without *litzen*. (9) Field cap showing national and state cockades on front. (10) Entrenching tool and bayonet suspended from belt with *troddel* knot. (11) Cartridge pouches of pattern worn by first-line troops in 1914. (12) Junior officers' shoulder strap. (13) Field officers' shoulder strap. All colours given in text.

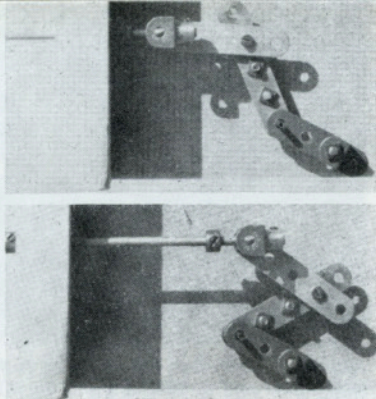
Timber!—from page 264

and thin card. Fig 3 is a side view of the derrick. Cut the stripwood to size for the boom, pillar, and stifflegs (2), and bevel the lower ends of the stifflegs at the appropriate angle. Trim the upper ends of the stifflegs so that they will fit neatly together and then glue them in the correct position.

Make two small holes through the pillar and one through the boom to take the cables, then glue pillar and boom together at their lower ends at the angle shown, reinforcing the join with a piece of thin card on either side to represent iron plates. Cut another piece of the card and bend to shape to fit over the upper end of the boom.

Gate and Fencing

These are from the Airfix fencing and gates kit. I made an operating



Arrangement of Meccano crank in 'open' and 'close' position for remote control of yard gate, if desired.

gate by using an old ball point pen refill as the pillar on which the gate swings. I made two cuts along this refill from one end about 1 mm apart and 15 mm long. Remove the segment between the cuts and you will find that the vertical post at the end of the gate will fit into the refill tube. If you align

it so that the horizontal beams are in line with the slot you can push the vertical down into the tube until the bottom horizontal bar of the gate reaches the bottom of the slot. Seal the two with Airfix liquid cement.

Fit the refill through a hole in the baseboard that is a fairly close fit. This forms the pivot on which the gate can swivel. Adjust the amount of tube above the baseboard so that the gate will just clear the track. Use the refill underneath the baseboard (cutting off any excess) to fit whatever form of remote control you intend to use. I fitted a crank to the refill tube after inserting a short length of wire of suitable size to fit neatly inside the tube to straighten it so that when I tightened the screw of the crank I didn't crush the tube. A simple push-pull mechanism for opening and shutting the gate was built up from Meccano parts.

Churchill Tank—from page 259

Lakeman ARK (Gun Churchill): Evolved in 1944 for wall crossing, this experimental device consisted of a combat Churchill with a sloping superstructure built on its hull. Attached to the rear of the superstructure which sloped down to the back of the vehicle was attached a hinged ramp. The vehicle approached its position in front of the wall, dropped its ramp, and the following vehicles climbed on to the ramp, crossed over the built-up superstructure and on to the wall.

Churchill Hudnott ARK: This was another device which incorporated rocket operating ramps. The ramps were mounted one on top of the other, with guide ways along the side, through which the ramps could be pulled by rockets. This existed as a project model only.

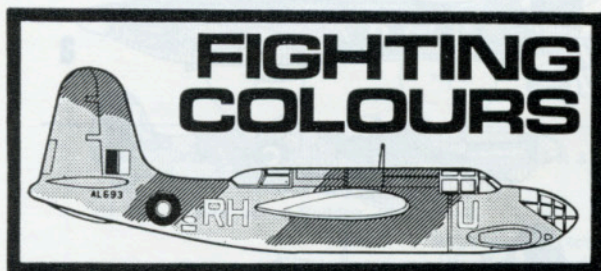
Churchill Woodlark: This consisted of a turretless Churchill tank upon which was mounted a girder superstructure and trackway similar to the ARKs. On top of the trackway were four folded ramps, each ramp being hinged in three places. The object of the hinging was to allow the ramps to articulate in their working position and follow the contours of the obstacle. The ramps were operated by rockets placed near the main hinges and at the end of the top sections. A set of quick burning rockets were also placed in each ramp assembly so that the shock of impact would be reduced as the ramps were falling.

Churchill Bridgelay (Bridge, Tank, 30 ft, No 2): Evolved for ditch crossing in assault during 1942, this device consisted of a 30 ft bridge carried on top of a turretless Churchill. When required the 4.8 ton bridge was lifted hydraulically on a pivot arm and placed forward across the gap to be bridged. The tank could also recover its bridge by the same process. The bridge was designed to carry a 60 ton tracked vehicle or Class 40 wheeled vehicles, and consisted of two tracks of welded construction joined together by cross pieces. The laying mechanism was operated by the driver. Basic vehicles used were Churchills III and IV. Crew was two men only, a driver and commander, and a special cupola was provided for the commander which was fitted with doors to provide entry into the tank. Weight of complete vehicle and device was 40.8 tons.

Churchill Bridgelay (Bridge, Tank, 30 ft, No. 3): This device was similar to Bridge Tank No 2, but the bridge had been modified to carry the new types of heavier tracked vehicles that were coming into service in 1946. Weight of bridge 5.2 tons. Later Churchill Bridgelayers (post-war) incorporated the Mk VII chassis. Both types remained in service post-war, seeing service in Korea, and not being finally withdrawn until the early 'sixties when the Centurion Bridgelay became available.

Skid Bailey: Used in operations in Europe, this device consisted of a Bailey Bridge of certain length (depending on gap to be bridged) assembled on skids near the site of operations. When erected the bridge was pushed or skidded (hence its name) by one or two Churchill AVREs fitted with nose attachments. As the bridge was built longer than the gap to be bridged, the gap was spanned by the main section of the bridge before the point of balance was reached. Typical use was for bridging large craters in roads under fire.

Churchill Mobile Bailey: This equipment was developed in the United Kingdom in 1943 and first used operationally in Italy in April, 1945, at the crossing of the river Senio. The Bailey Mobile Bridge was designed to be pushed as a complete class 40 bridge to a 70 or 80 ft wide gap, where it could be launched and opened to traffic within minutes. It was assembled a considerable distance from the site to be bridged to give protection to the bridge-building RE Unit. The bridge consisted of 150 ft span of Bailey Bridge fitted with 10 ft hinged ramps at either end. When erected the centre of the bridge was mounted on two Orola caterpillar tracks, which were tracked rollers but provided no power. An early type of this bridge used a turretless Churchill as the carrying vehicle instead of caterpillar units. The tail end of the bridge was connected to the nose of a Churchill AVRE by a pusher frame. The assembled bridge was pushed up to and over the gap until the Orola tracks had reached the edge and the main span of 90 ft of bridging protruding in front of these tracks was placed across the gap, the pusher tank then withdrew, dropping the hinged ramp. An additional AVRE towed from the front on the approach to the site.



Part 6: The Offensive in Europe

WHETHER to pilot, engineer or keen observer, initial confrontation by a Typhoon was memorable. This, the first 'second generation fighter' to enter RAF service in World War 2, had a long and unhappy development stage. It was the subject of alarming stories—mostly true ones. As the first Hurricanes left Hawkers, attention was already directed towards replacement for the 1940s. This was to be a larger, faster interceptor, packing a 12-gun punch. Events soon trampled on these enthusiastic plans. Two possible engines had been selected. One was the Rolls-Royce Vulture, which proved too troublesome. The other was the very powerful Napier Sabre. Its makers had to their credit the famous Lion engine, and more recently the unusual 'Dagger' which found little service use. In developing the Sabre, Napier took a huge bite at a complex engine and digesting the affair took many years. It was February 24, 1940, when P5212, the first Sabre-engined example of the machine named the Hawker 'Typhoon', first flew. Soon it encountered disastrous structural failure of the fuselage aft of the wing. Early test flights showed the rudder area insufficient for control with a motor which was already giving trouble.

Hardly had the prototype flown when production was concentrated on six major types already in service. CRD contracts were nearly all halted, and the Typhoon fell to one of those axes politicians delight in wielding with all too often disastrous consequences. For six months the Typhoon programme was in abeyance, but in October, 1940, came reinstatement. To cure the mounting snags there was still only one Typhoon flying, until May 3, 1941, when the second P5216 flew. Many months before the first contracts for production Typhoons had been placed, and Gloster went ahead with their order for 250.

Despite the problems far from worked out on the prototypes R7576, the first brown-green-duck egg green production machine with a black spinner, made its first flight on May 27, 1941 . . . three weeks after the second prototype! In some respects this proved fortunate for it seems possible that this aircraft—which in the later stages of the war proved of great value—might otherwise have been cancelled. With production machines at hand there was soon a pool of Typhoons.

Officially the RAF received its first Typhoon on August 27, 1941, when R7579 was posted to the Central Flying School for handling trials. The next machine wearing similar finish was delivered to AFDU Duxford on August 31, 1941. By September 7, dark sea grey had replaced the brown on the aircraft, which already had a Sky Type S tail band and spinner. September 7 was also the day that R7581 reached AFDU, the same day that I made a visit there.

As I arrived the well-known He 111 AW177 was on circuits with Ju 88 EE205. Soon Bf 109E AE479 was airborne, a Fulmar made a pass and the first Whirlwind prototype did a memorable 'beat-up'. None of these machines wore typical fighting colours—but this was not true of some amazing new

March, 1968



Top to bottom: Hurricane IIB fighter-bomber in factory finish. Note absence of yellow leading edge bands, painted later since these were not at this time generally promulgated (Photo: Hawker-Siddeley). Hurricane IIBs of No 174 Sqn at Manston in the early spring of 1942. XP-Y is BE684, XP-G is BE421. 'G' has exhaust guard for night flying. LK-R (a Mk IIC) of 87 Sqn in special night finish. Grey-green-black with what appears to be a shade of grey coding (Imperial War Museum photos).

shapes surprisingly lurking here and there on the field.

A puff of smoke, a new sound . . . no mistaking it; this was a Sabre engine, the sound of which had become familiar over recent months as those bulky Folland test-beds and the Sabre Battle did the rounds from Luton. There was little doubt—these aircraft were Typhoons and not Tornados! Along Duxford's western boundary were the grey-green 'sweep Hurricanes' of 56 Squadron. It needed little imagination to conclude that this distinguished unit had been chosen to pioneer the new seven-ton monster. Monster indeed—a close-up of R7591 proved this. It was in the latest green and dark sea grey paint scheme with yellow outer wing stripe. It had the 'solid' combing aft of the cockpit which much restricted the view, and the unusual car-door-like means of entry, the former featured probably by about the first 50 or so Typhoons and the latter by many more. Sky bands and spinner with 'R' aft of the roundels completed the colour scheme. Meanwhile, the working article was to be seen, for R7580 was taxiing out. As it rolled it was clear that the run was going to be long, and there was a pronounced swing. Once airborne the aircraft made a long rather flat climb. But my goodness, what a powerful roar it made, a sound that was to be the Typhoon's trade mark. Then came a very thrilling run across the field, the fastest I had then ever seen. Behind the scenes, however, feelings towards the Typhoon were more mixed and less enthusiastic!

Engine troubles soon became legion at Duxford, and there were some unpleasant fires. Rear view was poor, and during factory trials a second structural weakness, this time immediately ahead of the tail unit, manifested itself. It was cured by a special array of 'fishplates' around the fuselage. Carbon monoxide seepage from the massive engine brought some nasty incidents, cured by pilots wearing their oxygen masks, from engine start to the finish of the flight, and also by extending the exhaust stubs each to four inches long.

Delivery of cannon feed gear was erratic, thus the first Typhoons were fitted with six machine-guns in each wing as originally planned and not the four-cannon now really

Continued on next page

Fighting Colours — continued

required. P5216, soon after its maiden flight, had been fitted with four cannon; but it is likely that R7646, which first flew November, 1941, was the first production machine with cannon. This aircraft was also the first to have a completely transparent cockpit hood and combing whilst retaining the car-door-like entry.

One thing became quickly obvious—the Typhoon was quite unsuitable as a high-level interceptor. But at low levels its tremendous power conferred upon it a speed around 400 mph, and it also proved to be a very stable weapons platform and clearly could take hefty punishment.

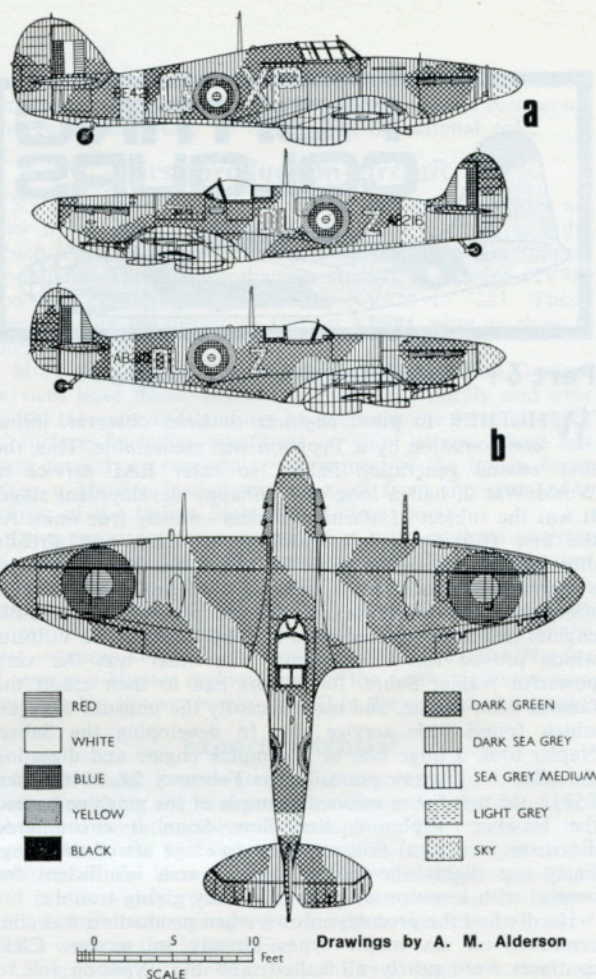
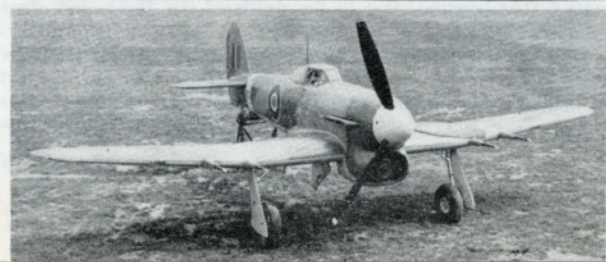
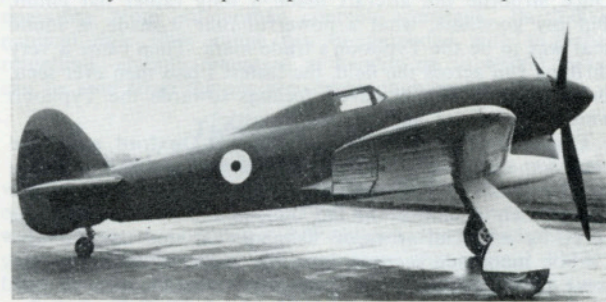
During October, 1941, Duxford's Typhoons acquired 'US' coding, which was an unfortunate combination in this instance. Typhoons generally carried unit letters forward of the fuselage roundel on the port side and aft on the starboard, and 56 Squadron proved no exception. By late October I had noted R7596:US-M and R7588:US-N, both with 'solid' canopy combing. Both were Mk IA, the version equipping 56 and other squadrons for many months. No 56's aircraft that I noted included R7581, '83:W, '84:S, '85, '89:U, '91:T, '92, and '95, all of which were with 56 Sqn by November 5, 1941.

On January 29-30, 1942, No 266 Sqn arrived at Duxford from Wittering to re-equip and work up with Typhoons, which it slowly did in the next few months. Initially its Typhoons were coded 'UO' as on R7634:UO-D. In April, 1942, No 266 Squadron re-coded itself ZH, perhaps to prevent confusion with 'UD'. A third squadron had now arrived at Duxford for conversion, No 609 Sqn, which moved in on March 30, 1942. During April '609' changed equipment and its Typhoons on May 5 included R7713:PR-Z and R7999:PR-P, both Mk IAs.

May 10 revealed R7787:ZH-C, a Mk IB with unfaired cannon, which variant was just being introduced into the Duxford squadrons. No 56 was no longer based there, having recently moved to Snailwell, but it was still part of the Duxford Wing whose leader flew a Mk IB R7684 with 'JG' ahead of the fuselage roundels and a Wing Commander's pennant on the entry door.

At the end of May, 1942, No 56 Sqn began brief small-

Below: P5212 the first Typhoon in its original glossy grey finish, worn only a short time before camouflage superseded it. Under surfaces black and white. **Bottom:** R7847, an early Mk IB, its cannon unfaired, but with clear view canopy fitted. Deep exhaust stack fitted, no under-wing stripes, no yellow leading edge band yet applied. At Duxford, prior to delivery to 266 Sqn (Imperial War Museum photos).



scale operations by detaching a few aircraft to south coast bases. After a week the squadron was again united at Snailwell, near Newmarket. On June 20, Duxford's Typhoon Wing flew its first Wing Sweep off the French coast. Ensuing weeks saw several more low-level ventures and by August, Typhoons of the three squadrons were fully operational. By then there had been other equally noticeable changes in Fighter Command featuring markings and not aircraft.

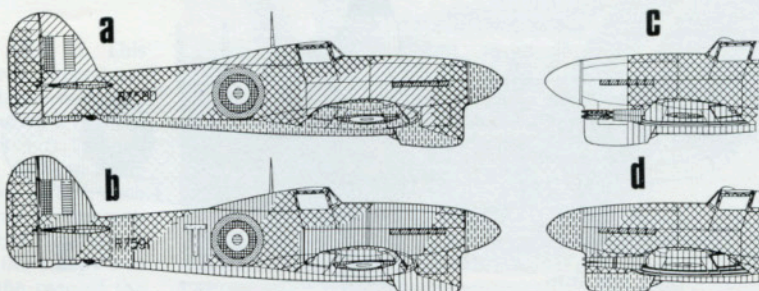
On July 1 a complete revision of markings occurred in the light of current and future operational needs. Dark green and dark grey (now officially 'Ocean Grey', although its rich shade with the blue tint was certainly uncommon until 1943) were now officially ordered for day fighters. Sky Type S bands, codes, spinners and yellow wing leading edges were also specified.

July 1 also saw the introduction of new style RAF roundels known as Types C and C1. The former consisted of blue-white-red sections, whereas C1 had a narrow outer ring. Roundels had previously sometimes been applied in sizes sometimes suited to particular types of aircraft, now they were to conform (for a while anyway!) to specified sizes, as follows:

	Yellow	Blue	White	Red	
Small size	18	16	8	6	inches/diameter
Medium size	32	32	16	12	

Above the wing tips 1/6 of the span inwards from each tip, Type B roundels remained, and day-fighters invariably wore C roundels beneath their wings. In the case of the

Left: (A) Hurricane IIB BE421 of 174 Sqn, March, 1942. (B) Three views of Spitfire VB AB216 after modification to take 'C' type armament. DL-Z belonged to 91 Sqn. **Right:** (A) R7580 depicted as seen at the start of September, 1941, at Duxford. (B) R7591 as 'T', one of 56 Squadron's early aircraft as on 22.12.41, coded R at one time, too. (C) Nose with white finish (interim) applied to 56 Sqn aircraft in 11.12.42. (D) Nose with the scheme carried by 181 Sqn aircraft.



Hurricane, these and the above roundels were set 80 inches in from the wing tip and the outer ring of the underwing roundel had a diameter of 32 inches. The fuselage roundel was three feet across, whereas previously the factory-painted roundel had been 42 inches in diameter. The new roundel was centred on side former No 5 on the fifth stringer from the bottom.

On their fins all fighters now carried flashes 24×24 inches including a white centre stripe two inches wide. Previously the Hurricanes had worn fin flashes 26 inches high by 24 inches wide, each stripe being 8 inches wide. Throughout July and August these markings were applied to a large number of aircraft, those in the front line rapidly acquiring them.

Some Defiants employed upon Air-Sea Rescue Service duty now bore a black stripe one foot wide beneath the nose tapering towards the tail. They began to have their brown upper paintwork changed to dark sea grey, too, but their under surfaces remained Sky to the end of their service.

There are other special markings worthy of mention. They include the CAM Hurricanes which were catapulted from merchant ships. These machines were ordered to be camouflaged dark slate grey and extra dark sea grey, with their under surfaces azure. Roundels were as elsewhere specified for the Hurricane.

An innovation was a yellow chordwise band one foot wide painted around each wing on Mustang I fighters. The outer edge of the stripe coincided with the outer edge of the wing flap. This was to prevent confusion with the Bf 109, and it remained standard practice on the Mustang until December 2 when orders directed removal. The aircraft were too conspicuous on their low-level *Rhubarbs* over enemy territory.

Spitfires shot down two Typhoons of 56 Sqn in error on June 1, 1942. They had mistaken them for Fw 190s—and this was not the first such incident, although the most distressing. There was a likeness, so some means of giving the Typhoons special identity was pondered over. In July the painting of a one-foot wide yellow band across the wing from the inner cannon was ordered. Several Typhoons that I saw at Duxford in August had two such bands, running aft from each cannon, but the single band became general and remained in force during 1943.

In November, 1942, 56 Squadron's Typhoons appeared with their noses forward of the mainplane all white, and other squadrons adopted such markings. An exception was No 181 whose fighter-bomber Typhoons had the lower areas of the nose in line with the wing centre line painted Sky Type S. Later that month, 56's aircraft could be seen wearing four one-foot wide black stripes two feet apart below each wing inner section. An order of December 5 instructed that white bands two feet wide were to separate the four black stripes. Although I saw many Typhoons flying at this period, it was February before I recorded one with white bands included. The all-white noses had proven most unpopular with pilots. They were quite keen to be identified . . . but not quite so readily.

Squadrons which used the Typhoon in 1942 were:

Mk 1A: Principal squadrons only are listed: several others (eg. 3 Sqn) used them as conversion trainers at a later date.

Sqn	Unit Code	Example	Dates/notes
56	US : L	R7621	August, 1942
181	EL	R7627	October, 1942; based at Snailwell.
182	XM : L	R7677	December, 1942; formed Martlesham, September, '42
197	OV	R7681	In use when formed Duxford, November, '42
198	TP	R7624	In use when formed in December, 1942
266	UO	R7619	Rec'd just before 266 arrived Duxford
609	PR : L	R7680	In use May, 1942

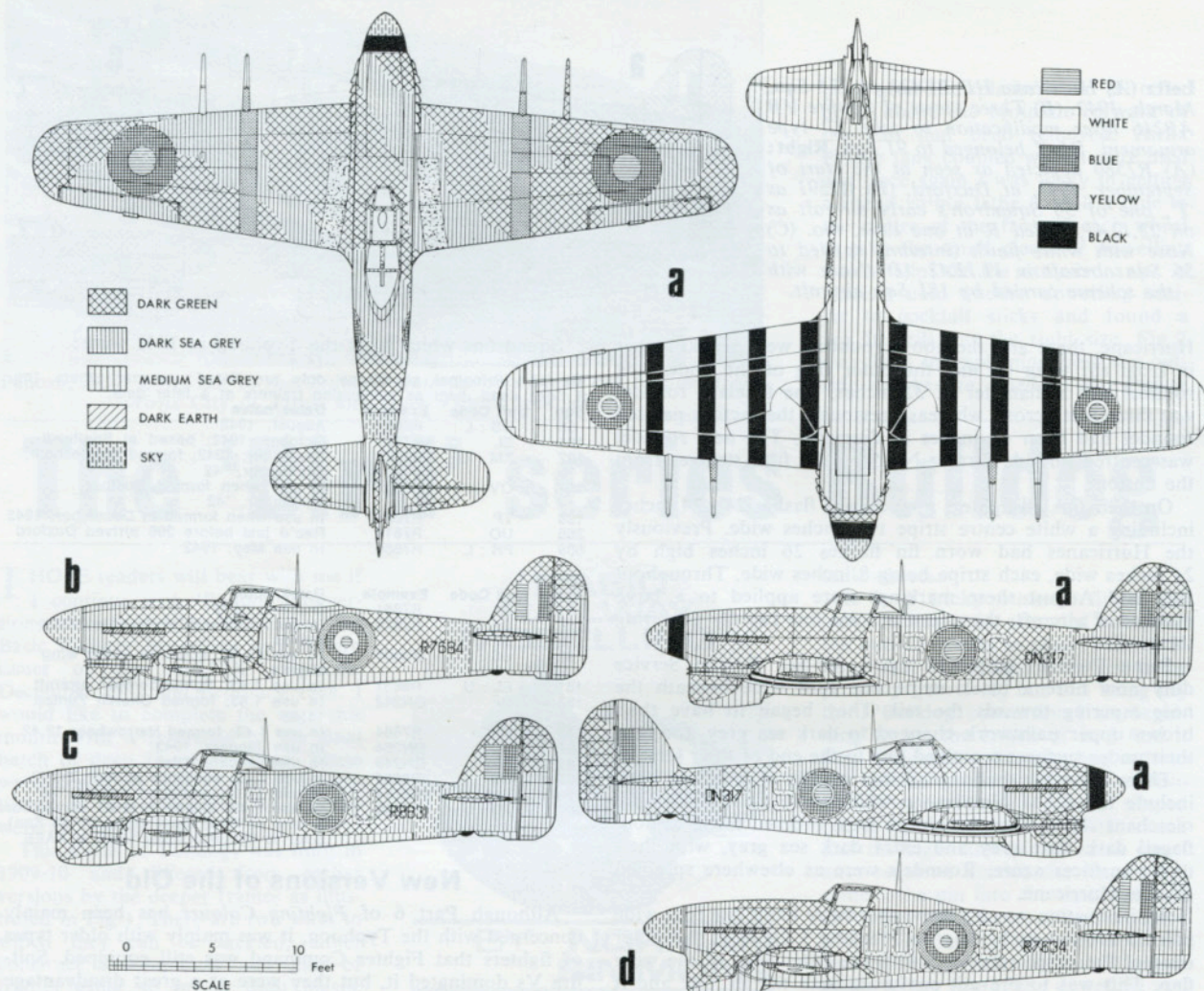
Sqn	Unit Code	Example	Dates/notes
1	JX	R7861	October, 1942
56	US : L	R7679	In use 11.42 with white nose/black stripes
56	US : L	DN307	In use 12.42; acquired under wing stripes
181	EL : U	R8831	In use 1.43; fighter-bomber aircraft
183	HF	DN242	In use 1.43; formed Church Fenton 11.42
193	DP	R7684	In use 1.43; formed Harrowbeer 12.42
197	OV	DN264	In use January, 1943
198	TP	DN249	In use January, 1943
257	FM	R8632	In use 7.42; equipped at High Ercall
486	SA : S	R8714	In use 11.42; equipped August, '42
609	PR : L	R7680	In use 9.42. R7646, first IB served for a time as PR-E (and also with 56 Sqn) prior to fighter-bomber trials at AAEE

New Versions of the Old

Although Part 6 of *Fighting Colours* has been mainly concerned with the Typhoon, it was mainly with older types of fighters that Fighter Command was still equipped. Spitfire Vs dominated it, but they were at a great disadvantage when facing the Fw 190. Mostly the Spitfires were Mk VBs fitted with two cannon and four machine guns, but in the closing months of 1941 the Mk VC with the Universal Wing or 'C' Wing which permitted the fitting of up to four cannon or two cannon and four machine guns or eight machine guns, came into use. The four-cannon version was not common, but frequently seen were VCs with the position for the extra cannon 'plugged'. During 1942, Mk VCs (usually with two cannon) were in service alongside VBs in many squadrons, including Nos 19, 66, 91, 92, 122, 130, 131, 152, 167, 234, 303, 310, 312, 313, 315, 317, 402, 501, 609, 610. Most VCs were sent to the Middle East.

The next major version was the Mk VIII, ultimately diverted overseas because an interim version, the Spitfire IX, proved itself a good enough match for the Fw 190. It was destined to serve in improved forms until long after the war. The Mk IX was a refined VC with stronger engine mounting for the Merlin 60 series engine, and a stiffened rear fuselage. Thus it was possible to modify Vs into IXs. This happened in a number of cases, and early Mk IXs were such conversions made by Rolls-Royce. AB505, the first of these, arrived at Duxford on April 26, 1942, for tactical trials. Apart from its longer nose, four-blade propeller and twin radiators—which became a good recognition feature—its most striking feature in flight was the engine note which somewhat resembled that of the American Allison. Gone was the

Continued on next page



Fighting Colours — continued

gorgeous purr and whistle of the old Spitfires. AB505 returned to Hucknall on May 8, 1942, credited with an excellent performance. More conversions soon followed, and Mk Vs on the production lines were soon being converted to IXs, as IXA, IXB and IXC.

No 64 Squadron at Hornchurch was the first to take the Mk IXB into action, which it did during a *Rodeo* on July 28, 1942. No 611 Squadron was soon after equipped and the principle was now to keep Mk IXs in 11 Group and to rotate squadrons from time to time, the aircraft changing hands as needed, until sufficient IXs were available for retention by squadrons not in the South. Nos 72 and 402 Sqn also used Mk IXs in July, 1942, and soon after Nos 133 and 401 had them.

Another Spitfire variant brought into use in 1942 was the high-altitude fighter Mk VI (with Merlin 47—high-altitude version of the Mk 45) fitted with 'pointed' wing tips, pressure cabin and four-bladed propeller. No special camouflage was applied to these machines in home squadron use in 1942, and those which at any time wore any were rare. X4942, the prototype, had an 'A' wing, but most had the 'B' wing. 100 were built and they formed in varying quantities the equipment of these squadrons: No 124 and 616 (fully equipped),

Above: (A) Plan and top views of DN317: US-C, also seen in the two profiles on the right. March, 1943. (B) R7684:JG, the Duxford Wing Leader's aircraft in the summer of 1942, with fairings in the cannon. (C) R8831:EL-U, one of the first Typhoon fighter-bombers, late 1942, prior to the introduction of special markings. Note minor modifications to the hoods on some aircraft. **Drawings by A. M. Alderson.**

Nos 66, 91, 129, 164, 234, 310, 313, 421, 501, 504 and 602—some 'rotating aircraft', in the manner of the Mk IX units. Nos 124 and 616 Squadrons received the aircraft during the period May-July, 1942, operated them over France, usually for high-cover work, and attempted to intercept Ju 88 high-altitude raiders over Britain in August and September, 1942. They remained in use for about a year with these two units.

Hurricane development had meanwhile continued, and in 1942 the 'Hurribomber' came into its own for operations by and over the Channel, including the 'Channel Dash' by the German capital ships on February 12, 1942. Hurricane IIB losses became heavy, but they and Mk IICs were still in use for Operation *Jubilee*, the Dieppe landing. By the end of the year losses were prohibitive, but the Typhoon was then in service in a fighter-bomber role, first with 181 Sqn, following trials with R7646 carrying 2 x 500 lb bombs.

Through 1942, Hurricanes performed a useful role as night-intruders for which they were either all-black, or had

Continued on page 276

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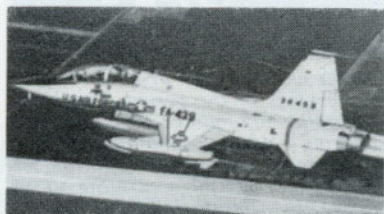
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Fighting Colours — continued

black under surfaces and some side surfaces. Red codes were usual, also red serials.

Fighter Command throughout 1942 continued its coverage of coastal shipping and, in increasing numbers, the Spitfires, Typhoons and Hurricanes flew across the Channel, tempting the Luftwaffe to battle. Its aircraft lacked range, however, so Fighter Command was fighting at a disadvantage such as the Luftwaffe had known in 1940. Large-scale escort was given to Bostons and Blenheims.

To attempt any detailed survey of the squadrons and their equipment would prove too vast for inclusion here, but the following survey covers a number of relevant aircraft types and squadrons.

Spitfires in use with home-based squadrons in 1942:

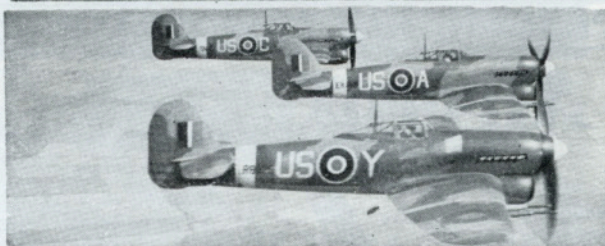
Sqn	Unit Code	Example	Dates/notes
609	PR : B	W3238	January, 1942; Mk VB
452	UD : D	AA911	February, 1942; Mk VB
72	RN : C	AA945	February, 1942; Mk VB
130	PJ : X	BL712	April, 1942; Mk VB
81	FL : V	BM158	May, 1942; Mk VB
91	DL : W	AA976	May, 1942; Mk VC
164	FJ : S	W3569	May, 1942; Mk VB
64	SH	BR600	July, 1942; Mk IXB
332	AH	AB269	Used over Dieppe 19.8.42; VB
124	ON : Y	AA920	September, 1942; Mk VB
133	MD : N	BS133	September 1942; Mk IXB
616	YO : P	BS111	September, 1942; Mk VIB
71	XR : K	EN737	September, 1942; to 334 Sqn USAAC 29.9.42; Mk IXB
164	FJ : O	BL368	October, 1942; Mk VB
401	YO : R	BS104	December, 1942; Mk IXB
611	FY : B	EN133	December, 1942; Mk IXB

Hurricanes in use with home-based squadrons in 1942:

Sqn	Unit Code	Example	Dates/notes
87	LK : Y	Z3779	January, 1942; Mk IIC, all black
247	ZY : S	BD336	January, 1942; Mk IIC, all black
253	SW : P	Z3171	January, 1942; Mk IIC, all black, red codes
402	AE : S	BE479	January, 1942; Mk IIB. Day camouflage
1	JX : Y	Z3778	February, 1942; Mk IIC, all black, red codes
3	QO : F	Z3068	February, 1942; Mk IIC. Day camouflage
175	HH : S	BE478	May, 1942; Mk IIB. Day camouflage
1	JX : E	BE581	May, 1942; Mk IIC. Day camouflage
3	QO : P	BD687	Lost fighting near Dieppe 19.8.42. Mk IIC. Day camouflage

New home-based fighter squadrons formed during 1942 were:

No 121 (fmd 5.42, coded AV, eg, Spitfire VB BM509:AV-R; became 325 Sqn USAAC on 29.9.42), **No 164** (fmd Peterhead 6.4.2, coded FJ), **No 165** (fmd Ayr 6.4.42, coded SK, eg, M:AR408 Mk VB), **No 167** (fmd Castletown 3.4.42, coded VL), **No 174** (fmd 3.42 at Manston, coded XP; Hurricane IIB), **No 175** (fmd 3.42 at Warmwell, coded



Top to bottom: EK183 in the early months of 1943 showing the ultimate in Typhoon markings of the period. The black band on the spinner was intentionally marked to aid head-on recognition and retained during 1943. A formation of 56 Sqn Typhoons with black and white bands and spinners with the black band added. Yellow stripes extend across the upper wing surfaces. US-Y:R8825 is nearest, US-C is DN317 ('Flight' International photos). AB216, a Spitfire VB modified to VC configuration, but having only stubs in place of extra cannon. Combined armament, whilst perhaps limiting the 'punch', allowed for greater flexibility of fire power. Aircraft are of 91 Sqn, coded DL (Imperial War Museum photo).

HH), **No 195** (fmd 11.42 at Hutton Cranswick, coded JE; used Typhoons), **No 332** (fmd 1.42, coded AH, eg, S:BL430 Spitfire VB), **No 421** (fmd 4.42, Digby, coded AU; Spitfire VB), **No 486** (fmd 3.42, Kirton-in-Lindsey, with Hurricane IIB, coded SA).

M. J. F. Bowyer

One or two readers have queried, suggested, or quoted squadron codes for units which I left blank or unconfirmed in previous listings in 'Fighting Colours' articles. For the record, QV was, of course, 19 Sqn. UO may have been 154 Sqn and has been listed (in Harleyford books) as it tied in with details of 154 Sqn. Similarly, HT has never yet been confirmed for 154 Sqn. EF is usually given for 232 Sqn, but again this needs confirmation. AFDU Duxford used AF, and I doubt its allocation to 607 Sqn as one reader claims. M.J.F.B.



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Sherman story

THE SHERMAN—AN ILLUSTRATED HISTORY OF THE M4 MEDIUM TANK, by Peter Chamberlain and Chris Ellis. Published by Arms & Armour Press and available by post from PSL Publications, Brooks House, Upper Thames Street, London, EC4. Price 30s.

THE Sherman story originally published as a series in AIRFIX magazine proved so popular with military enthusiasts that it now forms the basis of this new book on the subject by AIRFIX magazine's 'armour' writers. This is very much more than a straight reprint, however, only some 20 of the 80 pages of the book being material that has appeared before, and even this has been considerably revised with additions and amendments. Remainder of the book is taken up with an extensive picture-history of the Sherman with variants illustrated in chronological order and cross-referenced to the main text so that the reader can readily match the story with the pictures. There are 87 big pictures in all, most of them at least post-card size and some full-page size. Almost all the pictures are new in the book and only a few have appeared in print before. Even so, it has not been possible to illustrate every variant in the book, but between the book and the original magazine series this has very nearly been achieved. A full-page cross-section drawing of the M4A4 shows the complete internal layout of the Sherman design, and a further cut-away drawing shows ammunition stowage and equipment location, etc. Also included is a page of side-view drawings to constant scale showing six typical Sherman variants illustrating how the design altered during its career. Lastly, there is a detailed production summary builder by builder and model by model and specification tables for all the basic Sherman variants. The book is available by post from AIRFIX magazine editorial offices (signed by the authors if specially requested) or can be obtained from bookshops, in particular from those specialising in the military field. We noted that two captions, 51 and 52, had been wrongly transposed.

Flying primer

GO FLYING, by John O'Callaghan. Published by Faber & Faber Ltd, 24 Russell Square, London, WC1. Price 30s.

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JAMES MCCUDDEN was one of the few pilots concerned with military flying from the start to the end of the 1914-18 war. He began his association as an aircraft mechanic and ended it as a pilot with a score of over 50 enemy aircraft to his credit. This is the story of an outstanding man, and is also the story of aerial conflict throughout that war. It discusses the development of fighting tactics and McCudden's success as a leader. It is the first book telling in real detail the life story of McCudden, one of the greatest fighter pilots of all time.

Before reading this long-awaited book we looked at the photographs. Here was a work illustrated by new, exciting, fascinating pictures such as we felt certain the author would be bound to want to include. And what rare pictures they are. From them there is ample material to be gained by modellers.

One didn't need to read far to discover that this was an excellently written book, packed with new material and interesting anecdotes on the '14-18 conflict. It gives a very detailed account of McCudden's life—it is virtually a diary of his life—and concludes with a series of neat appendices listing McCudden's victories, hours spent flying various aircraft, listing them by serial number. Appendix 3 records the varying speeds and climb rates of British aircraft as noted by McCudden. Appendix 4 lists the British serials awarded to some of the aircraft shot down by McCudden, and No 5 discusses markings applied to his aircraft. Appendix 6 lists the serials of aircraft which he flew when on the squadrons. If the 1914-18 war interests you then you must add this excellent volume to your collection; it is a masterly history.

Aircraft miscellany

NORTH AMERICAN P-51 MUSTANG; MESSERSCHMITT 262; MESSERSCHMITT Bf 110; HEINKEL 177; RACING PLANES AND AIR RACES VOLS 2 & 3. Published by Aero Publishers Inc. Distributed overseas by W. E. Hersant, 228 Archway Road, London, N6. Price 23s 6d each, including postage.

SIX of the latest books in the Aero Publishers series of aircraft profiles, these make very useful additions to the aerophile's library as they contain a great many hitherto unpublished photographs of interesting aircraft.

Each book deals adequately with the subject. The illustrations are large and although printed by litho, a medium that never really lends itself to the quality that the British reader seeks, do give enough detail for the model maker who may be extra conscientious on this matter. Each of the aircraft subjects contains three view colour drawings and various colour side views in the centre pages.

HISTORICAL AVIATION ALBUM, VOL 4. Available from W. E. Hersant Ltd, 228 Archway Road, London, N6. Price 22s 6d, including postage.

THESE publications have been criticised in this column before for not reproducing the plans of each individual aircraft to a recognised scale. The fourth volume is no different from the others. Seven aircraft ranging from the Thomas Morse MB3 to the Piper Super-Cruiser are included and additionally there are some interesting notes on Billy

Continued on page 281

NEW

KITS AND MODELS

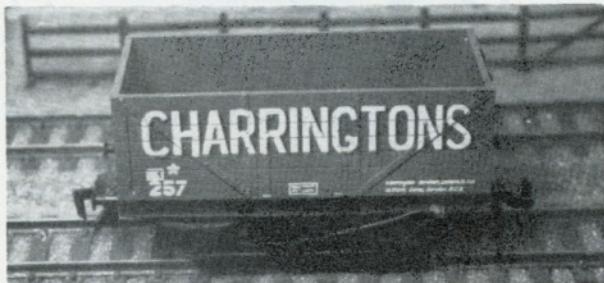
PRIVATE OWNER WAGONS

BMW Models have supplied us with a sample of one of the Trix OO gauge steel underframed private owner coal wagons. The body and underframe are separate plastic mouldings riveted together. The detail incorporated is quite outstanding and extremely cleanly moulded. One particularly noteworthy feature is the dummy chains holding the end door retaining pins. Our sample was the Charrington wagon which has a red-oxide 7-plank body with white lettering shaded black. The lettering is very neat and clearly printed yet it has a sufficiently weathered appearance to make it look natural. The 2-rail insulated metal wheels are a precision fit without any sloppy side play, yet they are remarkably free running and the wagon rolls beautifully on coarse or fine scale track. Hornby Dublo type couplings are fitted although provision is made for fitting the Tri-ang pattern.

Considering the precision with which the model has been made it is just a shade disappointing that some inexplicable departures from prototype dimensions are tolerated. For instance, the body is a good scale 6 inches too narrow for OO gauge and the wheelbase a scale 6 inches too long, but it is only fair to say that these departures from scale are hardly noticeable even when running the wagon alongside other scale sized stock. A tie bar between the two axleguards on each side and a vacuum brake cylinder are also features little likely to be found on the original but these can easily be removed with a craft knife. Trix now have a wide range of these private owner coal wagons and at the very agreeable price of 7s 11d they can be highly recommended. All are available from BMW Models of Wimbledon. N.S.

'N' GAUGE WAGON BODY

WE have not reviewed much 'N' gauge equipment in these columns but new developments are coming thick and fast to add variety to the wide range of equipment and rolling stock already available. BMW Models have supplied us with a kit of card parts and colour-printed paper sides for converting the Wren Mineral Wagon into a private owner coal wagon. Our sample, 'South Leicester', is coloured red-oxide with black strapping and white lettering and although the completed body measures only 1½ inches long and 1¼ inches wide (yes, this is the size of a coal wagon body in



Above: Private owner wagon by Trix in OO gauge is one of a series available from BMW Models of Wimbledon.

'N' gauge!) all the lettering is legible. A commendable achievement. Three other types are available: 'Wrights', 'G.H.', and 'A. G. Bailey', and all are available at 1s 6d each from BMW Models of Wimbledon. N.S.

SIMPLAS CHASSIS KIT

ALSO from BMW Models we have received a sample of one of the Simplas motorised chassis conversion kits for Airfix locomotives, but this has such far-reaching consequences for extending the usefulness of the Airfix kits that we propose devoting a whole edition of Basic Railway Modelling to reviewing this item after we have given it a thorough test. N.S.

LATEST CAR MODELS

TWO excellent models suitable for lineside use are the newest from Lesney. These are a very fine Ford Zodiac (the Mk IV version) with opening bonnet and excellent fine detail, scaled at 1:66, and a 1:69 scale model of the Mercedes Benz 'Binz' ambulance with opening rear door. Though both these are strictly speaking a little too big for OO scale, they are not noticeably so. Both have full interiors modelled and cost 2s 2d each, this being the new price for all the other 'Matchbox' size models made by Lesney. The Zodiac, incidentally, repainted gloss dark green would make a good staff car for collectors of modern military models.

A very realistic Commer mobile camera van in the colours of Samuelson Film Services is the newest Corgi model. This features a camera on a platform which can be fitted on either the roof, the front, or the rear of the vehicle for tracking sporting events and so on. The finish is impeccable, including even a dummy glass lens in the camera. This model would look ideal as a trackside accessory for slot racing fans, though it would need to be kept in the background on 1:32 scale layouts, due to its smaller scale of 1:43. Price is 10s 6d. Also to about 1:43 scale, Corgi have produced an attractive model of a Kew Dodge Fargo tipper truck, nicely detailed with separate chassis parts, opening bonnet, and dummy engine. Though this is the British-built Dodge, it closely resembles the US version. Price is 8s 3d. C.O.E.

NEWS FROM HISTOREX

LATEST releases in the Historex range of 54 mm (1:30 scale) figure kits cover the lancer regiments of the Waterloo period, five kits in all, which can be made into about 30 different varieties of figure by means of the alternative parts provided. Most colourful of these releases is probably Marshal Poniatowski, who was C-in-C of the Polish troops. He is in full dress, complete with hussar-style pelisse and busby. Next two kits are Light Horse Lancers of the Imperial Guard, one depicting the 1st Regt of Polish Lancers and the other the 2nd Regt of Dutch Lancers. In each case the model can be completed as either an officer, a standard bearer, a trumpeter, a NCO, or a lancer by using the alternative components supplied. These include the badges, horse furniture, and so on for the appropriate rank.

Continued on page 280

AIRFIX magazine



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4 NEW AFV'S

1/55 — ONLY 11/9

These are **BLUE LABEL KITS** BY **NICHIMO**.

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1/12 SCALE BY RIKO

A beautiful kit with full complement of chrome parts, full suspension and engine detail. Same high class as the Lotus 33, complete with motor.

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FORD G.T. 40

69/11

Tamiya 1/12 scale

HONDA F.1

69/11

PROFILES ARMOUR 2/6 IN PROFILE EACH

AIRCRAFT PROFILES

Late February :

199 Pfalz D.XII

200 Avro 504 (Part 1)

201 Bloch 151, 152

202 Douglas A-20 Series

(& a to Boston 111)

203 Heinkel HE 162

204 Lockheed P2V

Neptune

AP 1 Tank Mark IV

AP 2 PanzerKampfwagen

VI Tiger I (H)

AP 3 M.4 A3 E8 Sherman

AP 4 T.3 Christie

AP 5 Cromwell Mk. 4

AP 6 M.24 Chaffee

AP 7 A7V Sturmpanzer-

wagen

AP 8 PanzerKampfwagen

IV Tiger I (H)

AP 9 T-34/76B

AP10 Chenillette 'Lorraine'

AP11 Light Tank Mk. VII

Tetrach

Late February :

AP12 AMX.13

AP13 Renault F.T.

AP14 Fiat-Ansaldo M 13/40

AP15 Infantry Tank

Mk. 11 Matilda

AP16 Carden Lloyd Mk. IV

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AP18 Hanomag Sd.Kfz

251/1 APC

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New Kits — continued

The other two kits are Light Horse Lancers of the Line, and one can be made up as any of the 1st to 6th Regts of French Lancers and the other as the 7th, 8th, or 9th Polish Lancers. Again they can also be completed as officers, NCOs, etc., to choice. Highly detailed assembly sheets in French and English come with each kit and illustrate the combinations of finish and rank possible. An innovation in these kits over previous Historex offerings is the provision of tiny 'scaled' chinstraps for the helmets. To ease the painting of the heraldic devices on banners, etc., these are now moulded lightly in relief so that the complete insignia can be picked out easily with a brush. This is a great help to anyone not skilled enough to paint badges freehand. New horse positions—at the trot—are included with these kits, though any of the other horse positions from the Historex range is available to order. These are illustrated in the Historex catalogue. Each of the new mounted kits costs 28s complete, which may seem a lot for a plastic kit but is not exceptional when it is remembered that they are about the only 'bespoke' kits on the market. Historex Agents, 3 Castle Street, Dover, Kent, can supply.

Historex have now introduced a components service whereby any part from any kit can be purchased separately by those who wish to make up figures to their own choice. Legs, body, badges, heads, etc., are all available and a SAE to Historex Agents will bring a price list. Minimum orders for components must, however, total 10s unless kits are being ordered at the same time. Finally, Historex Agents tell us that a display of models from their range of kits will be included in one window of the Belgian National Tourist Office, Haymarket, London, during March and anyone who wants to see the scope of the range and lives in the London area would find it worth a glance.

C.O.E.

PLASTIC PUTTY

WE have recently had a chance to examine a ceramic plastic filler compound which is sold in putty form under the name Seel-Masta. This is not, in fact, intended as a modelling medium but obviously it has possibilities in this direction. Available from hardware and 'Do it yourself' shops mainly in southern England at present, it is meant principally as a filler for cracks in brickwork, around joints and frames, cracks in sinks, and any of the thousand and one other repair jobs which crop up round the house. It comes in $\frac{1}{2}$ lb packs at 5s 11d or 1 lb packs at 10s 11d and each pack consists of two compounds, A and B, which are mixed together in equal proportions in any desired quantity until it becomes uniform in colour right through. At this stage it looks and feels like Plasticine. The mixture is then applied by knife or even the fingers to the required spot and smoothed down with a damp cloth smeared with soap. In 24 hours it has dried rock hard and can be filed, sanded or drilled. We have not tried this in a plastic kit conversion in place of more conventional fillers, but there seems no reason why it should not be used. So far we have only tried it as rocky scenery for some cowboys and Indians and it proved most effective and easy to mould into shape. We think that it might well make up into fairings or other small fittings for model tanks and aircraft and we will mention it accordingly when we get round to trying something of this nature. The makers are the Kenilworth Manufacturing Co Ltd, West Drayton, Middlesex, who can supply further details or the name of a stockist on receipt of a SAE. They can supply direct when it is not stocked locally.

C.O.E.



Magnificent horseman of the Polish 9th Lancers of 1815 is one of the new additions to the Historex range reviewed here.

NEW TOOLS

TWO new craft knives with advanced features but at modest prices have just been introduced into the Steadfast range of tools. Both feature retractable blades which lock firmly in position and perform the dual function of protecting the edges when not in use and protecting the hands from cuts as well. Smallest model is the TK2 which has a simple nut-locking device, releasing and/or locking the blade with a sixpence or a screwdriver. The handle is a neat casting, curved to fit comfortably in the palm. Four blades are supplied with the knife, one in situ and three neatly stowed in the handle. The handle is in two halves and parts at the turn of a screw for access to and replacement of the blades. The TK3 is a more de luxe version of the TK2 with a slightly larger handle and a button-operated retracting blade. An additional feature in each knife is a hole drilled through the end which can be used to suspend it by a loop of cord if desired. Both our samples proved easy to use, very tough, and good cutters. We would particularly recommend them for youthful modellers on account of the safety features mentioned above. A range of alternative blades is available and the knives can be had from model shops or hardware stockists. Prices: TK2 8s 3d, TK3 9s 11d.

C.O.E.

BRIEFLY

THE Tamiya model of the Jagd Panther to 1:21 scale is now available in Britain for £5 19s 11d and stockists include BMW Models of Wimbledon and Modeltoys of Portsmouth, who can both supply by post. We described this model in detail in our October, 1967, issue. With remote control and separate track shoes, plus torsion bar springing, this is most definitely the most fantastic tank kit, detail-wise, yet released. Tamiya are following this with a Chieftain to the same scale and with similar features, and the advance sample we have seen indicates that it will better the Jagd Panther. It should be available in Britain in a few months' time.

Latest Tamiya tank releases in the 1:35 scale series are a King Tiger and a Jagd Tiger, both of which have a common type of chassis, of course. These are to the same high standard as the SU-100 released last summer, but an innovation is the provision of scale tracks in each kit similar to the Airfix type, should you wish to make a static instead

AIRFIX magazine

of a motorised model.

We've recently had a chance to examine the range of military vehicle plans published by J. Church, Honeywood, Middle Road, Tipton, near Lymington, Hants, and have no hesitation in commending these to anyone looking for references for scratch-building army lorries and other less glamorous types in 1:76 scale. Numbers 41 and 42 cover Scammell variants which can be made from the Airfix kit. Anyone who missed the conversion articles four years or so ago in AIRFIX magazine will find these plans a useful substitute. A SAE will bring a list. Each plan costs 1s 6d.

Series 14 in the Bellona series of military vehicle prints has also just been published. This contains excellent 1:76 scale drawings, plus pictures and text, covering the Mk IV tank, the Ram II, the Hummel SP gun, and the Porsche

Leopard of 1940-41. This interesting vehicle only existed in prototype form. Also included is an article on the PIAT. Price of the booklet is 4s from Bellona, Hawthorn Hill, Bracknell, Berks. This is certainly the best yet in the Bellona tank series.

Finally, we have received a set of modern British military vehicle pictures from R. E. Smith, 65 Ricardo Street, Longton, Stoke-on-Trent. These come at 10s 6d for a set of 30 pictures, each 3 inches × 5 inches. Each card has an index number which will be incorporated eventually into a classified listing. The series will cover mostly modern military equipment and weapons, and the pictures in our sample set covered field cars, mortars, heavy artillery, SP guns, and 'B' echelon trucks. Further details are available from Mr Smith on receipt of a SAE. C.O.E.

New Books—from page 277

Mitchell. The aircraft in most cases are sufficiently rare as to have hardly been heard of in this country. The information in the book is well written and well presented and the illustrations are of interest to model maker and air historian alike.

Railways at war

LIGHT RAILWAYS OF THE FIRST WORLD WAR, by W. J. K. Davies. Published by David & Charles (Publishers) Ltd, South Devon House, Railway Station, Newton Abbot, Devon. Distributed by Ward Lock & Co Ltd. Price 35s.

THIS extremely comprehensive book will appeal strongly to military historians, narrow gauge railway enthusiasts and modellers alike. Sub-titled *A History of Tactical Rail Communications on the British Fronts, 1914-18*, it covers all aspects of those fascinating military light railways so often to be seen in photographs of the period. The vast majority were to 60 cm gauge but some were 2 ft 6 in and others were metre gauge. The book covers their beginnings, development, policy, extent, day to day operation, layout, equipment, the place they played in post-war reconstruction, and their final end. Not the least interesting are the facts unveiled; for instance, 751 steam locomotives, 1,205 petrol tractors, and 16,310 wagons for the 60 cm gauge lines, operating at their greatest extent, averaged over 745 miles and carried 186,750 tons plus over 200,000 men weekly. The mileage varied month by month as flexibility was the very nature of these lines and succeeding chapters leave no doubt that no other form of transport known at that time could have fulfilled the job so well.

Included in the 196 pages of informative text are maps and diagrams and numerous dimensional outline sketches.

BRITAIN'S RAILWAYS IN WORLD WAR I, by J. A. B. Hamilton. Published by George Allen & Unwin Ltd, Ruskin House, 40 Museum Street, London, WC1. Price 40s.

WORLD War I changed the face of many things, not least our railways. The story of events as they affected Britain's railways, management and staff, train services and locomotives, is of great interest and ably told in this 220-page book. One of the added pleasures is that the author speaks with personal experience, not only as a member of HM Forces during World War I but also as a railway enthusiast. Students of railways will find much useful information, especially about locomotives and train workings, but the changing social pattern of the times, thus extending the book is equally informative about personalities and the book's appeal to a far wider audience.

On the Underground

LONDON'S UNDERGROUND, by H. F. Howson. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 30s.

SINCE the third and last edition was published in 1961 a great deal of progress towards completion of the Victoria Line has been made. All the tunnelling has been completed, rolling stock is under construction and experiments with automatic trains have taken place. These are a few of the references contained in this, the fourth edition, which make it a thoroughly up to date as well as comprehensive survey of the London Transport Underground system.

Military uniforms

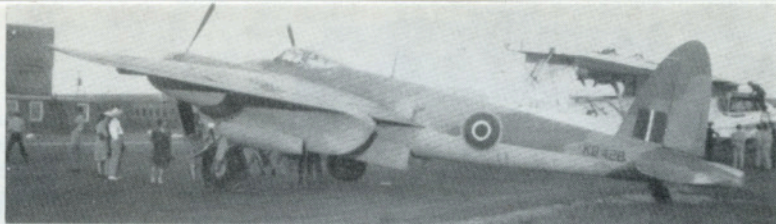
LE COSTUME ET LES ARMES DES SOLDATS DE TOUS LES TEMPS, by L. & F. Funcken. Published in Paris by Casterman and available in Britain from Ken Trotman (Arms Books), 18 Manvell Road, Swanage, Dorset. Two volumes, price 43s each (including postage).

THESE two volumes are quite remarkable; each runs to nearly 160 big pages with uniform illustrations on each right-hand page, and text and explanatory notes (in French) on the opposite left-hand page. Since there are an average of a dozen or so uniforms in full colour on each page of illustrations, the two volumes together must show something like two thousand uniforms—though we haven't made a precise count. What the author and illustrator of this work has set out to do is give a comprehensive coverage of uniforms (and equipment to a lesser extent) of every nation.

Thus Volume One covers the period from the Pharaohs to Louis XV and Volume Two covers from Frederick II to the present day. Keen converters of Airfix OO/HO size figures—and model soldier collectors in general—should find enough reference material in these two books to keep them converting for ever. Taking a few random examples, Volume One contains among much else just about every type of war chariot, animal, armour, emblems, weapons, siege machines, musical instruments, and fortifications used by the ancient fighters like the Romans, Greeks, Vikings, Trojans and so on. There are all the medieval period uniforms, early guns, civil war uniforms and all the European uniforms up to 1780. Volume Two we found equally interesting as this covers the American War of Independence, Waterloo, the Crimea, US Civil War, Franco-Prussian War, the world wars, Korea, and all the other conflicts and fighting nations of the last 150 years.

photoPAGE

More rare pictures from readers with captions by **Michael J. F. Bowyer**. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.



1



2

Key : (1) Mosquito XXV, KB428, photographed in Canada with Canso 11071 in background. This aircraft saw no service, being retained by the RCAF to provide spare parts. Picture by J. H. Hollocks. (2) Claus Madsen sent this picture of Junkers G-38 D-APIS, one of only two built, at Ejsberg, Denmark, a few years before World War 2. This is the second machine, named *Hindenburg*. Impressed into Luftwaffe service, it was destroyed in Greece in 1945.

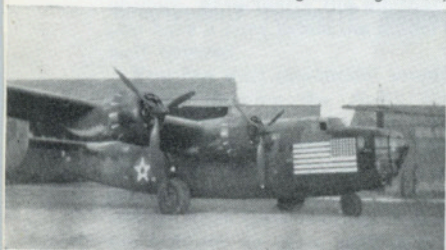


3

Key : (3) Carlos Da Fonseca sent this picture of a Ju 88G interned at Pedro Rubras airport, Portugal, in the closing days of World War 2. It was flown, probably from Denmark, by defecting Luftwaffe pilots. Colour scheme, very pale blue-grey with dark grey mottle. Codes are almost obscured, but it appears to be from NJG6. (4) From Stuart Robertson comes this view of a 112 Sqn Tomahawk under repair in the desert. (5) One of the first B-24s of the USAAF to fly into Egypt in 1941 before USA entered the war. (6) Camouflaged B-24, fitted with a target towing winch, Middle East, 1942. (7) Vincent K4697 in camouflage finish, 1941. All from Stuart Robertson.

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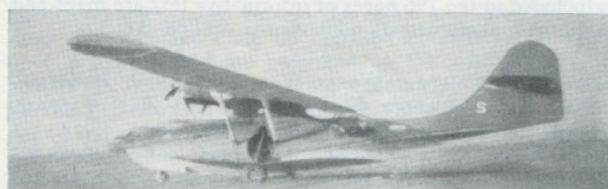
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9

Key : (8) Captured SM81 at Mombassa, a trophy of the Abyssinia campaign, painted sand overall with RAF roundels applied. Serial K33 painted just aft of side door. (9) Dutch PBY-5A of 321 Sqn RNethAF at Mombassa in 1944. Lower hull white, remainder intermediate sea blue. Code 'S' is applied in white and insignia are Dutch 'flag' emblems, being aft of gun blisters on fuselage sides. No serials are visible. Both pictures from A. McLean. From D. M. Warden comes (10) a view of two P-40s, 114288, nearest, in dual nationality markings and Middle East camouflage. (11) Rare shot of RAF Marauder FK371 : A; possibly of 14 Sqn, carrying a torpedo. (12) US Navy Grumman Goose at Capadocchino, Italy.

12



10

Letters to the Editor

Already allotted

I HAVE just read your February issue and in Alan W. Hall's article he says that "One wonders if the 002 prototype at Bristol will be G-ASST". Well, this registration has already been issued to a modest little Cessna 150 based at Biggin Hill. It is owned by the Active Flying Club and it stands for 'Sub-Sonic Trainer'.

A. Ferguson, Hampton-on-Thames, Middx.

DB5 steering

MAY I say that the method for putting steering on the Porsche was very satisfactory and may I thank J. Browne of Blackpool for the idea. There is a way of fixing steering on to the Aston Martin DB5 also. Simply do not glue parts 1, 2 to the chassis or to part 4. You will find that when part 4 is cemented on, it will hold them in place and they will steer.

R. Darby, Romford, Essex.

York tip

I HAVE recently completed the Avro York conversion from the September 1967 AIRFIX magazine and I used a different method of filling the grain and thought fellow readers may be interested. I used a polyester stop putty which is mixed in the same manner as the instructions state, but I added sufficient lacquer thinners mixed with the putty to form a polyester solution. This is applied to the model with a paint brush. Several coats are applied and when dry are cut down with a very fine grade of glass paper.

When I came to adding the portholes I found I could not obtain any black transfer sheet so I decided to use black PVC insulating tape. I cut the portholes, using a short piece of copper tubing with a sharp edge ground on one end as a cutter which is lightly tapped with a hammer. I hope these ideas may help other readers.

Brian Hoy, Walcha, NSW, Australia.

Useful tip

I WONDER if I could suggest an idea for readers. If readers cannot obtain old cloths for wiping and cleaning paint brushes, I find the plastic bags, used by Airfix for packing kits, a useful substitute.

M. Skillen, Hove 4, Sussex.

... and others

THE following are some hints which I myself find most useful:

(1) Modellers may like to try coating the cotton used in rigging (ships, biplanes, etc) with clear dope. This 'seals' the cotton and also does shrink it that little bit. Some experimentation in this is required as the thread can tend to go 'soggy' at first.

March, 1968

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

(2) A good 'mud' mixture can be made by mixing talcum powder and matt dark earth on a piece of paper. The mixture should include more talc than paint. It is then brushed on normally. The beauty of the method is that it is not as 'final' as using plastic putty and is not as messy as using the real thing.

(3) For filling small holes (unwanted location holes in conversions, for instance) I use a mixture of talc and polystyrene cement. This filler does stick to the sides of the hole and there is no danger of it falling through.

Noel J. Ray, Cork, Irish Republic.

Soviet DUKW

HAVING seen Chris Ellis's DUKW conversion in the December edition, I came up with some information on this vehicle. Its correct designation is the 6x6 Wheeled Amphibian, code named BAV. This vehicle is in use with the Armed Forces of the USSR and East Germany.

The BAV is sometimes armed with a 12.7 mm heavy machine gun DShK, which is the standard AA machine gun on Soviet tanks.

A. R. Ferguson, Liss, Hants.

Paint tray

I EXPECT many modellers, like myself, when faced with mixing paints and thinning out small quantities, have been hard put to collect enough paste pot lids, etc, to make small palettes. Perhaps the following idea will be of interest to others.

I take a lump of Plasticene (used for weighting the nose of tricycle aircraft), and mould it until pliable. I then press it on to the worktop and form an indent in the top using a Humbrol tinlet. A small square of aluminium baking foil is laid across the plasticene and gently pressed into the indent, again using the tinlet as a male former. This forms a clean, solid receptacle in which colours can be mixed.

When the particular colour paint is finished with, the foil is lifted out and put into the dustbin without disturbing the base 'mould'.

Other colours of paint can be dealt with immediately by pressing in another piece of foil.

There is no messy cleaning of palettes or old lids before another colour can be used.

B. Cox, Bognor Regis, Sussex.

'Moondrop' Stirlings

WHILE reading Michael Bowyer's Stirling Profiles last year, I was surprised to see no mention of the two famous 'Moon Squadrons', 138 and 161, who operated Stirling IVs from Tempsford, Beds, August 1944-March 1945. I flew with 138 Sqn, our particular aircraft being NF-R:LK119. We also flew



NF-Q:LJ999 until it crashed in Denmark. All our machines had rear turrets and retractable tail wheels, and I well remember the long walk back in the fuselage to make sure they were locked down prior to landing.

We usually carried 18-24 supply containers, according to the DZ, plus the odd 'Joe'—our nickname for agents. I enclose a picture of NF-R.

J. T. Breeze, Great Barford, Beds.

Leather finish

WITH regard to the letter on 'Leather finish' in the January issue, the idea of using Vaseline for obtaining a leather finish on models is risky, especially on areas adjoining parts which are meant to be matt, and of course dust will cling to the areas treated in this manner.

The best way I have found, is to mix gloss paint and matt paint, of the particular colour required. Matt takes the high gloss look from the gloss paint and a variety of leather finishes are thus available, dull leather to a shiny leather according to choice, and the quantity of matt or gloss paint mixed together.

T. C. Gandy, Billericay, Essex.

Rigging simplified

HAVING just completed the Airfix classic *Great Western*, I have found out what a tedious job rigging these models can be. I hope this method will be of some assistance to other readers.

Cut a number of lengths of the rigging thread, about a yard each. Then cement one end of a length to a position near the bows where a rigging wire begins. Cement another end to another position, and continue down the length of the

Continued on next page

Letters — continued

ship like this. By the time you reach the stern, the bow lines should be dry enough for the correct length to be cut off, and the other end secured. This is repeated as necessary.

G. F. Bennett, Clacton-on-Sea, Essex.

Making spinners

I AM an assiduous reader of your magazine. I find it more and more interesting! May I propose hereby a suggestion? I think it may be of use for the kit converters.

Making a spinner is a rather difficult operation. I have found an easy way to make it. The only material required is the cap of a 'Bic' ball-point pen.

(1) Cut off the top of the cap (11 mm). Use a razor blade.

(2) According to the number of blades, cut 2, 3 or 4 small triangles, to locate the propeller blades.

(3) It might be necessary to reduce the inner thickness of the cap. This is easily done by using a razor blade.

(4) Apply a drop of ordinary polystyrene cement. The propeller is now ready.

I have tried this with a spare Stirling propeller, and the result is quite satisfactory.

R. Cauchie, Brussels 9, Belgium.

A most ingenious idea—since there are several makes of plastic ball pen available, judicious selection should enable the average modeller to find something near the shape he needs.—EDITOR.

Matt transfers

NOW Airfix have started to use matt transfers, I find that they are apt to come off a model in dry conditions.

To rectify this I place a little Lion spreader glue on to the corners of the detached transfer, making sure that I don't break it.

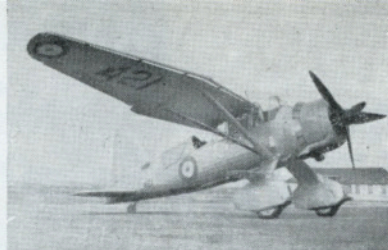
I find this is a very effective method of 'mending' a transfer after it had broken off.

One must make sure that no glue runs round the side of the transfer as the glue leaves a mark.

John Harper, Carshalton, Surrey.

Lysander hook

I NOTE with interest the review by Alan Hall of the new Hawk 1:48 scale Lysander kit in the February issue. However, one small error needs to be pointed out. I refer to the matter of the Message Hook—as can be seen from the photograph herewith (reproduced on this page—EDITOR)—this fitting was in fact attached at a point just forward and above the starboard side wheel spats, and pivoted at this point swinging down from here with the actual hooked end coming level when horizontal with the rear canopy bulkhead—ie, level with a vertical line drawn downwards from the last window frame in the rear canopy cover. These message hooks were not, however, so common after early 1941 as they had little use on aircraft engaged in the ASR role. In regard to the small inspection window just below the leading edge of the fin on each side of the fuselage, these were often replaced with metal removable plates, but can be



Above: Official RCAF picture submitted by Mr Jones clearly shows the message pick-up hook and its attachment point just ahead of the starboard wheel spat. This modification plus silver overall colour scheme and black codes '421' would be an ideal finish for the Airfix model.

added to the model if one removes the moulding detail of these panels with a file and blade and then carefully trims to fit thin perspex or clear plastic sheet; not all that difficult a job if done carefully. Headlights from 1:32 scale or other car kits can be trimmed and used to represent the lights in the spats. I admit that these items should have been added in the kit but for reasons of cost they had to be omitted. These simple points may be of interest to those making either the Hawk kit or the 1:72 scale Airfix kit of the Lysander.

R. C. Jones, Editor, IPMS Magazine.

601 Sqn badge

IN the article 'Fighting Colours, Part 1' the captions to the drawings of the Airacobra and the text both refer to a 'winged arrow motif'.

This is in fact, a representation of the badge of 601 (County of London) Squadron. This badge, designed by Lord Edward Grosvenor, who founded the squadron, depicted the scarlet sword of London sprouting wings at the hilt (described by the Royal College of Heralds as 'the Sword of London piercing a pilot's wings').

A further point of interest is that this squadron badge has never carried a motto which is, so far as I am aware, a unique example.

A. J. Gillmore, Tonbridge, Kent.

Civil War flags

I HAVE followed with considerable interest Michael Blake's Civil War Series, which has been excellent. Perhaps I may be allowed to offer some additional information on Battle and State flags of the Confederacy.

The Battle Flag as shown with the Infantry for the Confederates was only used from May 1, 1863, until March 8, 1865. During this period, it was outlined in white. The flags used before and after this date are shown in my sketch.

Three Southern States have flags which can be traced with accuracy to the Civil War period, and these are shown in the other drawings. The Texas flag shown is the only authorised one permitted by the State of Texas, by a decree of 1839. Whether the 'Bonnie Blue Flag' is a piece of artist's licence, or real historical truth, I wouldn't care to say.

The Regular Cavalry guidon used by both Union and Confederate forces in the early part of the war was the familiar red-over-white swallow-tail pennon supplied with the Airfix US Cavalry set, the Union one being altered shortly afterwards to a 'Stars and Stripes' variation shown in the Cavalry article.



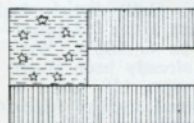
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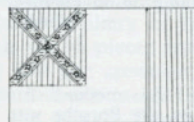
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Mr Gibson's sketches show the three Southern State flags (above), the Confederate States flag, March 1861-April 30, 1863 (top left), and the Confederate flag from March 8, 1865 (bottom left). Broken horizontal shading depicts medium blue. Other colours as indicated.



The Artillery Regiments of the Union Army also had a Union Flag Standard similar to the Infantry one shown.

The above information has been gleaned from many sources, principally from the *National Geographic Magazine's* September, 1934, issue. I hope it may prove of value to readers. One last point—the REME flash is red, yellow and navy blue.

Robert C. Gibson, Shifnal, Salop.

Wrong squadron

I AM writing to correct an error in the Photopage of the October AIRFIX magazine. One of the two Mustangs is said to be a Mk III of No 3 Sqn, RAAF. This is incorrect, the squadron codes of No 3 being CV. It is, in fact, an aircraft of No 450 Sqn, RAAF. This is backed up by the Mustang to the left of OK:F, with shark's teeth, a popular insignia among 450's personnel. The probable reason for your calling it a No 3 aircraft is the Southern Cross insignia on the rudder, which was standard with No 3's Mustangs, and I must admit I have never before seen a 450 Mustang with this marking.

Also of interest are the strange coloured props of OK:F.

Another thing which puzzles me is the Mosquito on the same page, serialised MM669/G. Could anyone tell me from where they got the 'G'?

Robert W. Hall, Neutral Bay, Australia.

Michael Bowyer writes: *Our reader is correct, my apologies. 'G' indicated that the aircraft carried special equipment and that whilst on the ground it must be specially guarded—hence 'G'. It was common on Mosquitoes with AI Mk VIII and Lancasters with H25 and those modified for 'Upkeep', the Dams raid.*

Rubber finish

I HAVE in the past seen through this column the excellent quality of Airfix kits criticised, because of the omission of vinyl tyres on the car kits.

I wonder how many readers have tried using eggshell black paint to paint their plastic tyres. I use Joy 'Berlin Black', which gives more of a rubber appearance than vinyl.

P. Anson, Garsington, Oxon.

AIRFIX magazine

Bentley — from page 251

the axle in place. While this is setting, the supercharger is modified to clear the track rod. This means that the piece cut from the undertray will need reducing in length. It is then cemented to the top half which in turn is cemented to the radiator. It is a good idea to paint this and various other parts before fixing to the body. So while the paint dries, the wheels can be dealt with.

The plastic tyres are removed as before, either on a lathe or more laboriously, chucked in a hand drill. A slight dish is made in the rim to help retain the tyre; this time I used four from the MRRC range, the largest they make. These are a bit oversize but not too noticeably so. The wheels were then painted and the rubber tyres cemented on taking care to get them true with the wheel. Needless to say, the speed of any conversion like this is governed by the drying time of

paint and cement, so it is perhaps useful to have this second job lined up to fill the waiting period.

With everything dry we can continue with construction. This largely follows the kits instructions; do not fit part 13 (the seats and tonneau cover) at this stage. This will come later. You will, however, find the petrol tank also needs modifying to clear the back axle assembly.

At the front end, a small hole to clear a 10 BA bolt has to be drilled through the supercharger to register with the one in the front axle. This bolt will carry the guide shoe and strengthen the axle fixing again as in sketch F. The wires from the shoe go through where the supercharger was cut away and are connected to the motor by small pieces of rubber sleeving taken from household flex.

With the guide and track rod in place, the wheels can now be attached. The fronts are retained by the small washers and pins of the stub axles. Slip short lengths of tube on to the back axle as spacers to control the

lateral movement and tap the wheels gently into position; alternatively a bench vice can be used, making sure the thrust is square on the axle ends. We are now able to try the 'mechanics' on a short length of track—a normal Airfix straight is the job for this. Check that the back axle runs freely and the car sits squarely on all four wheels with the guide in the slot but not fouling the bottom. The Bentley can then be given a track test and if satisfactory part 13 fitted with four spots of cement, this will enable it to be removed if necessary.

Extra detail can be added to suit one's fancy, in this case I cut away the plastic windscreen and fitted small aero screens from perspex; the spare wheel was also left off.

If you want all the 'gen' on the prototypes, plus ideas for numbers and trim, then the appropriate issue in the Car Profile series is worth getting. For those who wish to finish the model as Birkin's famous Bentley, refer to the special article on page 69 of our October, 1967, issue.

Military Modelling — from page 253

was used by all nations equipped with this vehicle, and the blade and fittings came as a kit for fitting in the field.

Start by cutting out mounting plates, as in the drawing, from 20 thou plastic card and cementing these to the middle bogie bracket. The hydraulic leads (under armour channels) were led from the right-hand headlamp bracket on the glacis, across the nose beneath the row of bolts, and down the centre of the nose to the hydraulic cylinder which raised and lowered the blade. I made this armoured channelling by cutting out two 10 mm × 2 mm strips of 30 thou plastic card and cementing them on the nose like an 'L' back to front. For the hydraulic cylinder I cut a recoil cylinder from a discarded 88 mm gun (though a piece of Biro tube would do just as well), cementing it on the nose at 45 degrees.

Meanwhile, you can make up the blade, starting by cutting out the sides (from the drawing) and the deepest part of the back of the blade, making this 40 mm wide. With these three parts cemented together, the remaining faces of the blade, all 40 mm long rectangles are cut out and added, ensuring that everything sets square. There is a lip along the bottom edge of the blade, its position dotted in the drawing. The blade arms are 54 mm × 2 mm strips of 30 thou plastic card—though you may have some suitable strips of scrap plastic—cemented on the back of the blade 2 mm in from the edges.

Stand the model on an even surface while the whole assembly sets hard. Then add the link from the top of the hydraulic cylinder to the centre back of the blade. Last task is to make up the armoured covers for the link arm and the hydraulic cylinder, using the templates as a guide and cementing them up butterfly fashion. The smaller cover goes over the link and the larger one over the cylinder. The only other addition I made to the basic model were sheets of *appliqué* armour on the sides, small dustguards at the front end of the tracks, and the M34A1 mantlet from a 13 mm × 6 mm rectangle of stiff paper.

March, 1968

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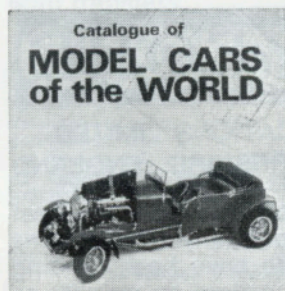


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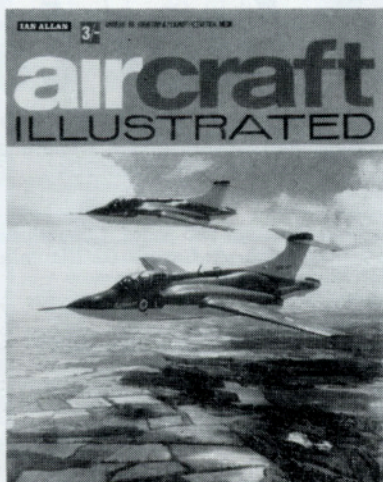
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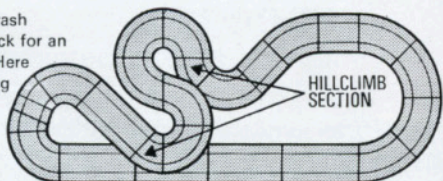
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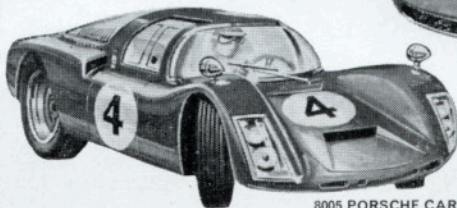
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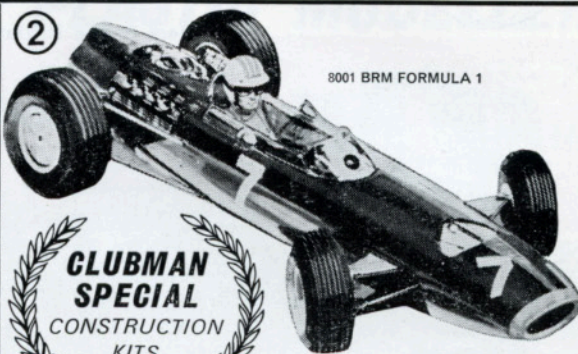
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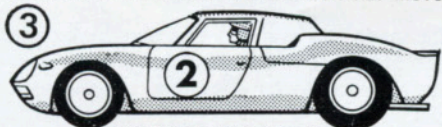
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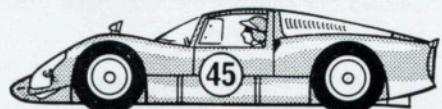


8004 ASTON MARTIN DB5

NEW ADDITIONS TO THE STANDARD
'READY TO RACE' RANGE WITH NEW HIGH 'REV' MOTOR



5140 FERRARI 250 LM Price 22/6d.



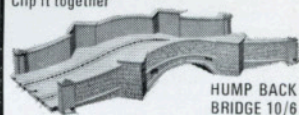
5141 PORSCHE CARRERA Price 22/6d.

④ The AIRFIX /MRRC Variable Speed Controller. Ideal for competition racing. 15 or 30 ohms. 10/3d. each.



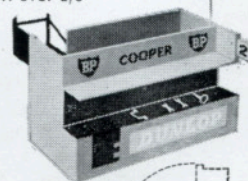
AIRFIX MAGAZINE concerned solely with plastic modelling. News photographs, articles. Two shillings monthly.

⑥ JUST SOME OF THE
TRACKSIDE ACCESSORIES
Clip it together

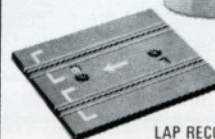


HUMP BACK
BRIDGE 10/6

Build it yourself
PIT STOP 2/3

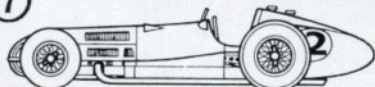


STARTER
UNIT 9/9



LAP RECORDER 10/9

⑦ 1/32 scale CAR KITS WITH 4 WHEEL DRIVE 52/6d. each



723 MERCEDES BENZ 154



727 INDI-NOVI-FERGUSON

1/32 scale READY TO RACE
WITH STANDARD 3 POLE MOTOR 40/6d.
725 MERCEDES BENZ 154 726 INDI-NOVI-FERGUSON

SEE THIS FABULOUS RANGE AT YOUR
LOCAL MODEL SHOP

AIRFIX-MRRC

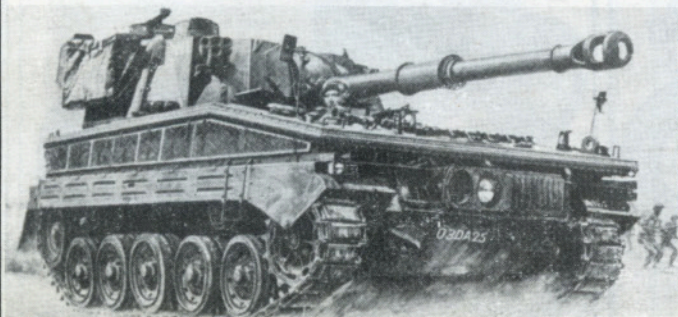
THE COMPLETE RANGE OF MOTOR RACING ACCESSORIES
AIRFIX PRODUCTS LTD · HALDANE PLACE · GARRATT LANE · SW18



YOUR INTERNATIONAL MODEL MAIL ORDER HOUSE



Suppliers to the British and Overseas Governments



BRITISH ARMY ABBOT

105 mm. SELF-PROPELLED GUN

with gear box and switch gear already assembled and mounted. Complete with motor and glue.

THIS IS THE PRODUCTION MODEL
NOT THE PROTOTYPE.

27/11

NEW NICHIMO 'BLUE LABEL' AFV'S

BRITISH ARMY

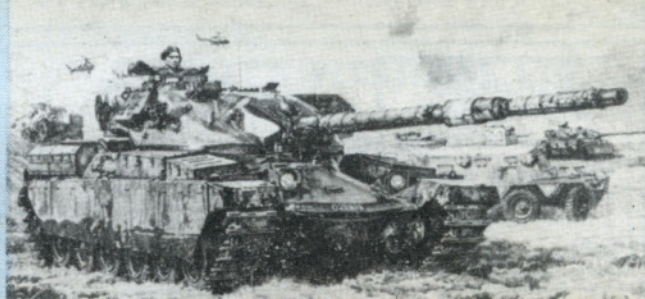
CHIEFTAIN

120 mm. GUN BATTLE TANK

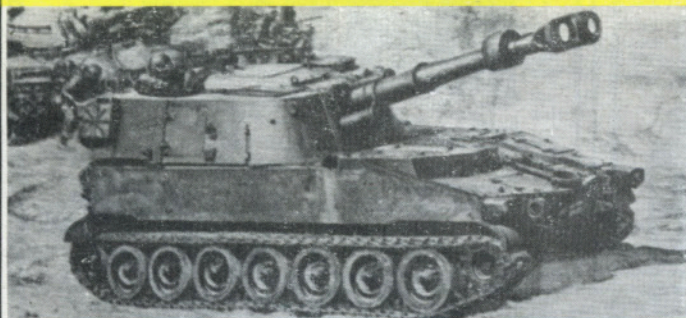
Assembled gear box and assembled switch gear. Complete with electric motor, glue, etc.

THIS IS THE PRODUCTION MODEL
NOT THE PROTOTYPE.

37/11



ALL 1/35 SCALE SUPER KITS



U.S. ARMY

105 mm. M109 SELF-PROPELLED HOWITZER

With gear box and switch gear already assembled and mounted, complete with motor, glue, etc.

27/11

Beautifully made kits with very fine detail, we consider these to be one of our very best imports and draw your attention to the very low, pre-devaluation prices.

See also our advertisement on page 279

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